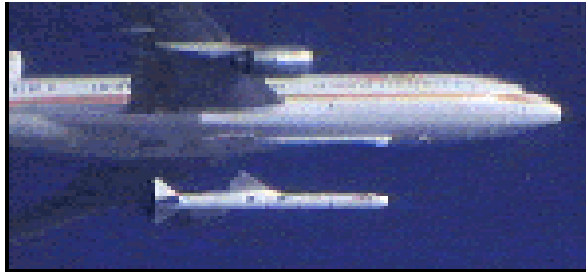




John F. Kennedy Space Center

LAUNCH SERVICES PROGRAM



# Pardon the Interruption Meeting January 2008





John F. Kennedy Space Center

LAUNCH SERVICES PROGRAM

# Fleet and Mission Status



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## MSL Project Summary

## LAUNCH SERVICES PROGRAM

Mission	MSL
Launch Date	2009/09/15
Launch Vehicle	Atlas V
Launch Period Window	TBR/Time/Instant./dual daily
PPF	PHSF

OVERALL MISSION

Nov	Dec	Jan
R	R	R

MISSION MANAGEMENT

Observatory Status  
Manifest/Range  
Integrated Schedule  
ICD  
CDRLs (S/C & LSC)

Nov	Dec	Jan
Y	Y	Y
G	G	G
G	G	G
G	G	G
G	G	G

LAUNCH SITE

LSSP  
Customer Inputs  
PPF  
Launch Site Unique  
Spacecraft OPS

Nov	Dec	Jan
G	G	0
G	G	0
G	G	0
G	G	0
0	0	0

SAFETY & MISSION ASSURANCE

Mission Assurance  
Safety  
Quality  
Reliability

Nov	Dec	Jan
Y	Y	Y
G	G	G
Y	Y	Y
G	G	G

ENGINEERING

Launch Vehicle  
Mission Specific  
Certification  
Mission Analysis  
ERS/ERB  
Launch PAD/GSE  
Mission Unique IV&V

R	R	R
Y	Y	Y
G	G	G
Y	Y	Y
Y	Y	Y
R	R	R
0	0	0

COMM & TELEMETRY

Communications  
Telemetry

G	G	G
0	0	0

BUSINESS

Budget  
Contracts

G	G	G
G	G	G

DOWNRANGE TELEMETRY

Ground Stations  
Deployables  
P-3/OTTR

0	0	0
0	0	0
0	0	0

NUCLEAR

Launch Approval  
LV Data Books  
Security  
Radiation Safety  
Facility

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

LEGEND

Proceeding on Plan  
Area of Concern  
Significant Problem  
Not Evaluated  
Not Applicable

G
Y
R
0
N/A

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## LAUNCH SERVICES PROGRAM

P R C B  C F  C C C U R R E N C E	5 91-100%					
	4 51-90%					
	3 11-50%			MC269 MC266 MC271 MC270		
	2 6-10%		MC244			
	1 1-5%					
		1	2	3	4	5
		IMPACT				



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## MSL - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

There are no Actions.

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/Problem	Open Date	Due Date
Engineering	G	Additional requirements not captured in LSTO are resulting in unplanned task order. Items include: spacecraft 28v power, additional lightning suppression assembly requirements that are out of scope of original proposal.	WI	3/1/07	
Engineering	G	RP Tank Long Term Redesign	ERS-06-305	7/01/07	4/1/08
Business	Y	ULA has begun to request extensions to the normal 30 day turnaround time for proposals on almost every Statement Of Work, with varying rationale. It appears that this is becoming the norm rather than a trend. The extensions may begin to affect schedule if they continue (GN2 SOW).	WI	11/30/2007	01/31/2008

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## MSL - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
GN2 purge and battery cooling requirement received from JPL and submitted to ULA for assessment.	02/28/2007-10/31/2007
Receipt of updated s/c thermal model was completed in December 2007. Review of model and re-run of thermal analysis is in work.	10/01/2007-12/19/2007

Planned	
Awaiting spacecraft mass documentation to confirm 4000 kg maximum mass. Project informed an increase beyond 4000kg on 11/30.	09/15/2006-02/28/2008
Next ECS TIM TBD. PECS feasibility assessment in work. GN2 redundancy proposal for implementation task has been ATP'd.	03/01/2007-01/31/2008
A MUPDR reconvene is required due to inadequate requirements definition in several areas at MUPDR. MUPDR reconvene will most likely occur at the same time as the MUCDR for Trailblazer, March 2007.	09/13/2007-03/31/2008
Project has requested LSP to evaluate schedule and risk associated with maintaining 2 trajectories in the final CPWSR analysis cycle. Plans to be discussed at Flight Design TIM February 7th.	12/06/2007-02/07/2008
MSL MIWG/ICD review planned for January 16th in Denver.	01/16/2008-01/16/2008
MSL Trailblazer TIM planned for January 30th to review JPL procedures.	01/30/2008-01/30/2008
MSL ATLO Readiness Review/Systems Integration Review planned for January 24th.	01/24/2008-01/24/2008

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# MSL Mission Management

Tammy Harrington

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD

MSL
2009/09/15
C3: 23-11 (max/min) km/sec^2
Atlas V
TBR/Time/Instant./dual daily
PHSF
4000kg
SLC 41



### ICD

Nov	Dec	Jan
G	G	G

There are no signed  
SCNs

There are no SCNs in  
Review

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Nov Dec Jan

Y	Y	Y
Y	Y	Y
G	G	G
Y	G	G
0	0	0
0	0	0
0	0	0

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

G	G	G
G	G	G
G	G	G
0	0	0
0	0	0
0	0	0

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

JPL

Mars

Richard Cooke

Dave Woerner/Jim  
Colvin

Tammy Harrington

Jim Behling

John Hueckel

Randy Mizelle

Laura McDaniel

Marty Lougheed

Rolando Nieves

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## MSL - Engineering

Jim Behling

### LAUNCH SERVICES PROGRAM

#### Launch Vehicle

Payload Fairing

First Stage

Second Stage

Third Stage

Payload Attach Fitting

Other

#### Mission Specific

#### Certification

#### Mission Analysis

ERS/ERB

Launch PAD/GSE

Mission Unique IV&V

Nov	Dec	Jan
R	R	R
G	G	G
0	0	0
0	0	0
0	0	0
G	G	G
0	0	0
Y	Y	Y
G	G	G
Y	Y	Y
Y	Y	Y
R	R	R
0	0	0

#### REQUIREMENT VERIFICATION STATUS

NUMBER OF REQUIREMENTS	0
VERIFIED TO DATE	0

#### LAUNCH PAD / GSE MODS (IF APPLICABLE)

Lower PLF ECS  
Access Platforms  
VIF Level 5 Structural Support  
Clean Enclosures  
GN2 Purge Upgrades  
Aeroshell ECS

#### MISSION UNIQUE STUDIES (IF APPLICABLE)

There are none.

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## MSL - Mission ERB Status

Jim Behling

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	05-354	MSL IRD Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G	06-370	MSL Mission Unique Requirements Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
R	06-371	MSL Mission Peculiar Design Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Y	06-372	MSL Mission Unique PDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Y	06-373	MSL Mission Unique CDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## MSL - Vehicle ERB Status

Jim Behling

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	06-305	RP Tank Long Term Redesign	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	ERS-07-265	First Flight of Basotect/MA100 foam FAP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## MSL - Launch Site

John Hueckel

### LAUNCH SERVICES PROGRAM

#### LSSP

Nov Dec Jan

G	G	0
---	---	---

LSSP	Planned	Released
Preliminary	09/15/2008	
Baseline	03/16/2009	

#### CUSTOMER INPUTS

Nov Dec Jan

G	G	0
---	---	---

#### DELIVERABLES

Nov Dec Jan

Security and Badging	G	G	0
Training and Personnel Cert	G	G	0
Contingency Plans	G	G	0
Safety LSIM	G	G	0
Radiation Control	G	G	0
Operational Plans	G	G	0

#### UNIQUE REQUIREMENTS

##### LAUNCH SITE UNIQUE

Nov Dec Jan

G	G	0
G	G	0

##### PPF

G	G	0
G	G	0

Trailer for Spin operations

##### Spacecraft OPS

0	0	0
---	---	---

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# MSL Budget Breakdown

Randy Mizelle

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Other services directly attributable to the mission.
- Contains some flexibility except when technical risk is affected. Spacecraft requirements are the cost driver.

\* **Integrated Services**

- LSP contractor support service (ELVIS, CAPPs, JBOSC, KICs, etc).
- USAF range costs attributable to the mission
- Limited flexibility

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility;
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

\* **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.

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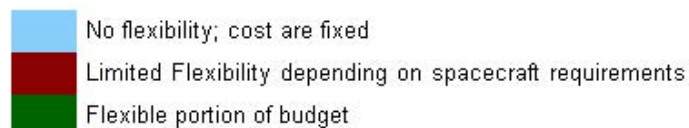
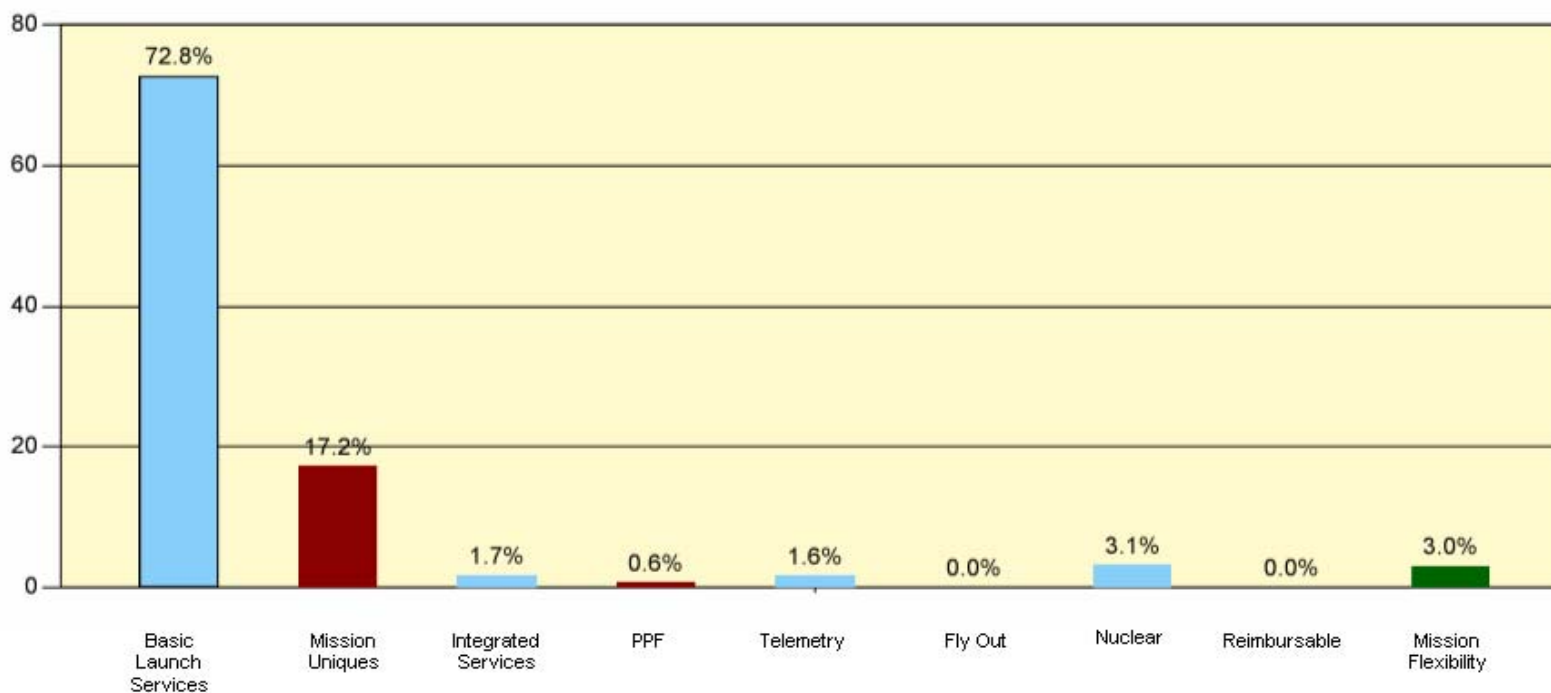
## Launch Services Budget Breakdown

MSL Mission

Randy Mizelle

### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 1 / 2008



#### Notes:

Variance: Total NOA reduced by transfer of funding to JPL for chillers - all percentages slightly modified. Mission Uniques adjusted due to three Task Assignments authorized on Launch service provider contract as well as liens created for new requirements. Bookkeeping of Nuclear processing costs moved from "PPF" to "Other" category.

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## MSL - Business

Randy Mizelle

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Nov	Dec	Jan
G	G	G
G	G	G

Milestone	Date
Milestone 1	6/30/06
Milestone 2	9/20/06
Milestone 3	4/02/07
Milestone 4	07/24/2007
Milestone 5	10/11/2007
Milestone 6	1/16/07
Milestone 7	3/15/08
Milestone 8	6/15/08
Milestone 9	9/15/08
Milestone 10	12/15/08
Milestone 11	3/15/09
Milestone 12	6/15/09
Milestone 13	9/15/09

<input type="checkbox"/>	Open Milestone Payment
<input type="checkbox"/>	Paid Milestone

### Contract Status

Launch Services		
Contract Mod	Number	Description
	NLSL-083	ATP Mission
	NLSL-091	S/C Mass & Backup Launch opportunity revisions, ATP of Mission Unique Services: 3- Interleaved Telemetry, 11- Mission Unique Flight Design and Analyses, 12 - External Access Platforms, 13 - VIF Level 5 Structural Support & Platform configuration, 14 - CI
	NLSL-094	ATP of Mission Unique Services 8.0 - Diode Assemblies & 9.0 - Enhanced PLA Cleaning & UV Inspection
	NLSL-098	3% Volume Buy Discount Application

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There are no LD Contract Mods				
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	NLSB-199	Pre-ATP Trajectory	Cancelled	
	NLSL-053	Pre-ATP Trajectory	4/1/06	4/24/06
	NLSL-054	AV NEPA & Launch Approval SAR Databook support	12/22/2006	1/18/07
	NLSL-060	MUS 11 Pre-Authorization	12/31/2006	2/12/07
	NLSL-073	Separation Pointing Accuracy Evaluation	5/30/07	6/28/07
	NLSL-074	PDLC Interface Data Output Requests	4/30/07	05/16/2007
	NLSL-079	Early Integrated Thermal Analysis	10/31/2007	11/26/2007
	NLSL-080	28 Volt Power	07/30/2008	
	NLSL-081	Final Design Load Cycle (FDLC) Interface Data Output Requests	11/30/2007	12/03/2007
	NLSL-083	PECS As Backup to VIF ECS Feasibility Assessment	12/15/2007	
	NLSL-086	LC41 Environmental Control System (ECS) GN2 System Redundancy Addition Feasibility Assessment	02/15/2008	
There are no PPF Contract Mods				
There are no Other Contract Mods				
	Issues			
G	Additional funding for Radiological Control Center upgrades is expected to be received from SMD.			
G	Launch Service Milestone Payment #6 has been received and is under review.			

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Center

# MSL - Safety and Mission Assurance

Laura McDaniel

## LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion			
	Complete	In Work		Nov	Dec	Jan
<b>Quality</b>				Y	Y	Y
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Monitoring RP tank redesign/qual and AV-09 FIV anomaly investigation.	Y	Y	Y
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	G
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues or concerns	G	G	G
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	G
<b>Reliability</b>				G	G	G
FMEA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues.	G	G	G
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues.	G	G	G
<b>Safety</b>				G	G	G
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tailoring in work.	G	G	G
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues.	G	G	G
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues.	G	G	G
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Phase II S/C MSPSP - comments provided	G	G	G
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reviewing for possible propulsion system variances	G	G	G
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues.	G	G	G
<b>Mission Assurance</b>				Y	Y	Y
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues.	G	G	G
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Multiple mission unique items needing review.	G	G	G
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	RP-1 tank re-qualification in-work	Y	Y	Y
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues.	G	G	G
Risk Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No significant issues.	G	G	G

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# MSL Comm & Telemetry

Marty Loughheed and Rolando Nieves

LAUNCH SERVICES PROGRAM

## Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Nov	Dec	Jan
G	G	G
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

## Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Nov	Dec	Jan
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

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# MSL Nuclear

John Giles

## LAUNCH SERVICES PROGRAM

	Nov	Dec	Jan
Launch Approval	G	G	G
LV Data Books	G	G	G
Security	G	G	G
Radiation Safety	G	G	G
Facility	G	G	G

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# OSTM Project Summary

## LAUNCH SERVICES PROGRAM

Mission	OSTM
Launch Date	2008/06/15
Launch Vehicle	Delta II
Launch Period Window	
PPF	Commercial PPF

### OVERALL MISSION

Nov	Dec	Jan
Y	Y	0

### MISSION MANAGEMENT

Observatory Status  
Manifest/Range  
Integrated Schedule  
ICD  
CDRLs (S/C & LSC)

Nov	Dec	Jan
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### LAUNCH SITE

LSSP  
Customer Inputs  
PPF  
Launch Site Unique  
Spacecraft OPS

Nov	Dec	Jan
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### SAFETY & MISSION ASSURANCE

Mission Assurance  
Safety  
Quality  
Reliability

Nov	Dec	Jan
Y	Y	Y
G	G	G
Y	Y	Y
G	G	G

### ENGINEERING

Launch Vehicle  
Mission Specific  
Certification  
Mission Analysis  
ERS/ERB  
Launch PAD/GSE  
Mission Unique IV&V

Y	Y	Y
G	G	G
0	N/A	0
G	G	G
G	G	G
G	G	G
G	G	G

### COMM & TELEMETRY

Communications  
Telemetry

G	G	G
0	0	0

### BUSINESS

Budget  
Contracts

G	G	G
G	G	0

### LEGEND

Proceeding on Plan  
Area of Concern  
Significant Problem  
Not Evaluated  
Not Applicable

G
Y
R
0
N/A

### DOWNRANGE TELEMETRY

Ground Stations  
Deployables  
P-3/OTTR

0	0	0
0	0	0
0	0	0

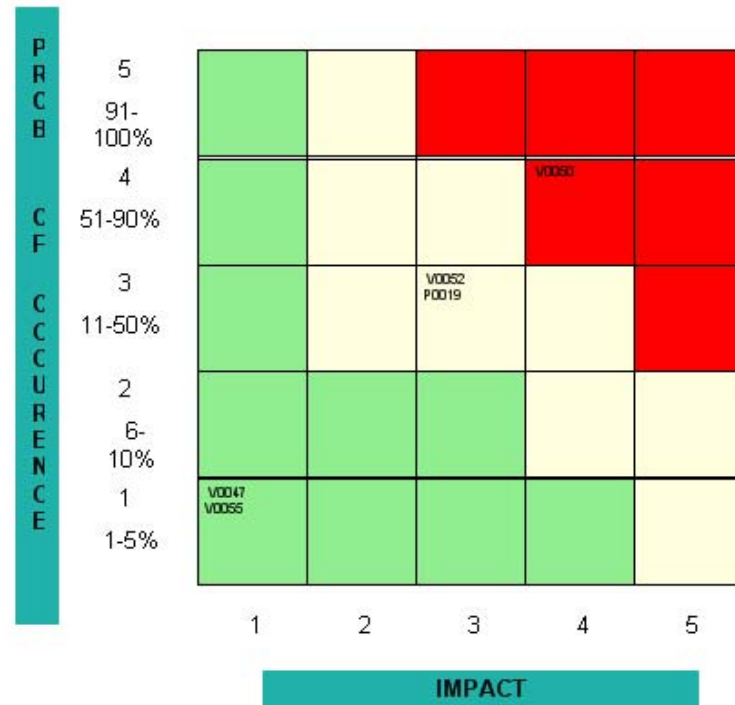
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## OSTM - Open/Accepted Risks

### LAUNCH SERVICES PROGRAM



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		Condition
RYG Trend	RiskID	Consequence
0	V0052	LSP SMA has noted human error and process issues that indicate that ULA Delta quality management system corrective actions are not preventing re-occurrence.
		The re-occurrence of undetected human errors and process problems can lead to major damage or loss of flight hardware or GSE.
0	V0050	Dawn experienced a significant delay very late in the hardware production process that delayed the launch readiness date. The same contributing causes exist for other NASA missions. In addition, ULA just in time delivery approach provides little margin to hardware need dates.
		Possible delay of other NASA missions.
0	V0047	Failure analysis of a Pacific Scientific PN 107800-201 detonator (SN 4498) that failed service life extension testing uncovered a manufacturing process vulnerability in which detonators could be reworked and inadvertently returned to production without the correct load of explosive material.
		Failure to initiate third stage ignition or FTS destruct ordnance chain on command.
0	V0055	Failure analysis of a Pacific Scientific PN 107800-201 detonator (SN 4498) that failed service life extension testing uncovered a manufacturing process vulnerability in which detonators could be reworked and inadvertently returned to production without the correct load of explosive material.
		Failure to initiate third stage ignition or FTS destruct ordnance chain on command.
0	P0019	USAF must fly out 4 Delta II GPS by the end of FY 2008 to avoid USAF Program impacts.
		NASA FPB Manifest dates may be required to move to provide GPS priority.

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## OSTM - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

There are no Actions.

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/Problem	Open Date	Due Date
Engineering	G	First flight of CSA Softride on Delta-II to mitigate the spacecraft c.g lateral load factors and the payload axial MECO load factors.	WI	7/19/2005	01/31/2008
Engineering	G	RF hazard analysis resulted in unexpected high E-field levels due to the conservative assumptions made in the analysis. Analysis indicated that the SC cannot radiate/transmit after fairing encapsulation (with and without RF hats installed). SC provided the updated antenna characteristics (Antenna gain & boresight angle) and ULA is redoing the analysis. This analysis will include the RF environment from the forward facing camera and special flight instrumentation		06/14/2007	02/12/2008
Engineering	G	The preliminary separation analysis showed that the roll rate and transverse rate requirements as listed on the ICD are not met. This is being worked and will be a topic of discussion at the Augut MIWG. (GH 08-07)  Draft SCN 005 is being worked to update the ICD with the correct requirements. (TF 11/13/07)		08/14/2007	01/28/2008
Overall Mission	Y	Decatur Production Schedule issues to support first and second stage need date at the launch site		01/15/2008	03/12/2008

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## OSTM - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
CCR written to change the configuration of the launch vehicle from a 7320-9.5 to a 7320-10.	
Range Concept Briefing	05/18/05
CLA data delivered to S/C	
S/C PDR	Nov-2005
Boeing performed the Quick CLA to determine loads on S/C with 10 Ft fairing.	
Preliminary Isolation system design	
Kick off MIWG	06/29/06
ATP	Mar-2006
Study(TA) on load alleviation systems	
RFP to take Isolation system to PDR	
Satellite CDR	10/24/06-10/24/2006
MIWG/GOWG at JPL	11/16/2006-Nov. 2006
SoftRide Isolation System PDR	02/8/2007-2/8/2007
Meeting with CEO office to present Softride System for OSTM	11/21/2006-11/21/2006
MIWG/GOWG	02/21/2007-02/22/2007
Isolation System Phase II Turn on	3/23/07-4/3/07
OSTM Spacecraft Load Isolation System PDR & ERB	02/08/2007-02/08/2007
ICD ERB	4/8/07-4/8/07
ICD ERB Peer Review with Integration Group completed.	04/04/2007-04/04/2007
Softride system - Component Level CDR (KSC ERB held in conjunction with the CDR / ERS-07-142)	5/15/07-05/15/2007

Planned	
OSTM MIWG at KSC	02/28/2008-02/29/2008
OSTM Spacecraft Qualification Review at Thales Alenia, Cannes FR	03/10/2008-03/15/2008
OSTM Isolation System integration to flight payload attach fitting (PAF)	01/24/2008-01/30/2008
OSTM Isolation System and PAF shipment from HB to VAFB	02/22/2008-02/25/2008
OSTM Spacecraft Ship from Thales Alenia, Cannes FR to VAFB	04/17/2008-04/22/2008

*Sensitive But Unclassified*

Softride Component Level CDR - Action Items Responses (ERB Reconvene) prior to start of QQual Test Program.	06/05/2007-06/05/2007
OSTM 3715 PAF HAR at Astrium, England	07/11/2007-07/13/2007
OSTM MIWG & GOWG @ Alcatel, France	08/30/2007-09/02/2007
OSTM Separation shock Tests at Alcatel, France	08/27/2007-08/29/2007
Softride System- Isolators Qualification Testing at CSA	06/26/2007-07/21/2007
Softride - System Level CDR @ HB ( LSP ERB in conjunction) - ERB completed partialy. A recontinue is scheduled for August 21.	08/09/2007-08/21/2007
OSTM Vibration Testing at Alcatel, France . Accomplished successfully	08/28/2007-08/13/2007
ICD Signed off.	06/14/2007-9/02/07
Payload to Blockhouse Wiring Diagram reviewed by LSP team and comments provided to ULA. Updated version in work	06/08/2007-06/18/2007
RF Hazard Analysis Review complete. Errors found in the analysis due to conservative assumptions. ULA is updating the analysis.	06/05/2007-06/18/2007
Preliminary Mission Analysis Input reviewed and submitted to ULA.	04/10/2007-04/16/2007
Preliminary Mission Analysis results expected July 13.	07/13/2007-9/02/07
Payload Separation Analysis- Initial Memo expected June 15.	06/15/2007-07/21/2007
OSTM Fit Check at Alcatel, France	10/08/2007-10/12/2007
OSTM Softride Isolator Hardware Acceptance Review at CSA Engineering	09/26/2007-10/02/2007
Spacecraft Mass Simulator Tap Test and Model Correlation	11/01/2007-11/20/2007
OSTM Softride Isolation System Dynamic Testing At Huntington Beach	11/05/2007-12/21/2007
OSTM Softride Isolation System Shock Attenuation Testing at HB	12/03/2007-12/21/2007

***Sensitive But Unclassified***

OSTM GOWG at VAFB	12/11/2007-12/13/2007
OSTM MIWG AT VAFB	12/13/2007-12/13/2007
S/C Thermal Model Developed by JPL and Converted to Required Format BY NASA LSP	11/20/2007-12/04/2007
S/C Thermal Model Delevered to ULA	12/05/2007-12/05/2007

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# OSTM Mission Management

Armando Piloto

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD



### ICD

There are no signed SCNs

OSTM
2008/06/15
1336 km polar, 66 degree incl.
Delta II
Commercial PPF
620 kg. /
SLC-2

Nov Dec Jan

G	G	G
---	---	---

There are no SCNs in Review

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Nov Dec Jan

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

G	G	G
G	G	G
G	G	G
0	0	0
0	0	0
0	0	0

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

JPL

Parag Vase

Mike Gallagher

Armando Piloto

Thomas Frattin

Julie Schneringer

Walner Thervil

Craig Schreiber

Mike Patton

Alex Biamonte

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## OSTM - Engineering

Thomas Frattin

### LAUNCH SERVICES PROGRAM

#### Launch Vehicle

Payload Fairing

First Stage

Second Stage

Third Stage

Payload Attach Fitting

Other

#### Mission Specific

Certification

Mission Analysis

ERS/ERB

Launch PAD/GSE

Mission Unique IV&V

Nov	Dec	Jan
Y	Y	Y
G	G	G
G	G	G
Y	Y	Y
0	N/A	0
G	G	G
0	N/A	0
G	G	G
0	N/A	0
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

#### REQUIREMENT VERIFICATION STATUS

NUMBER OF REQUIREMENTS 0

VERIFIED TO DATE 0

#### LAUNCH PAD / GSE MODS (IF APPLICABLE)

There are none.

#### MISSION UNIQUE STUDIES (IF APPLICABLE)

CLA to determine S/C loads

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## OSTM - Mission ERB Status

Thomas Frattin

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
0	ERB-06-330	OSTM Soft Ride System- System Level PDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
0	ERB-07-142	OSTM Softride System- Component Level CDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	ERB-07-73	OSTM ICD ERB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	ERB-07-181	OSTM SoftRide System- System Level CDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	ERB-07-273	OSTM TPAF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## OSTM - Vehicle ERB Status

Thomas Frattin

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
Y	02-07	Delta II 2nd Stage Propellant Tank Design and Process Revisions (Clickbonds)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Y	07-TBD	Delta II Alenia Tank FM-21(OSTM) Circumferential/Boss Weld Defects	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Sensitive But Unclassified*





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## OSTM - Launch Site

Julie Schneringer

### LAUNCH SERVICES PROGRAM

#### LSSP

Nov Dec Jan

G	G	G
---	---	---

LSSP	Planned	Released
Preliminary	03/15/2007	05/18/2007
Baseline	12/12/2007	12/12/2007

#### CUSTOMER INPUTS

Nov Dec Jan

G	G	G
---	---	---

#### DELIVERABLES

Nov Dec Jan

Security and Badging  
Training and Personnel Cert  
Contingency Plans  
Safety LSIM  
Radiation Control  
Operational Plans

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

#### UNIQUE REQUIREMENTS

##### LAUNCH SITE UNIQUE

Foreign National Escorts  
European Power  
Supplies/UPS

Nov Dec Jan

G	G	G
G	G	G
G	G	G

##### PPF

Commerical PPF  
PPF TAA

G	G	G
G	G	G
Y	Y	Y

##### Spacecraft OPS

Fueling

G	G	G
G	G	G

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# OSTM Budget Breakdown

Walner Thervil

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Other services directly attributable to the mission.
- Contains some flexibility except when technical risk is affected. Spacecraft requirements are the cost driver.

\* **Integrated Services**

- LSP contractor support service (ELVIS, CAPPs, JBOSC, KICs, etc).
- USAF range costs attributable to the mission
- Limited flexibility

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility.
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

\* **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.

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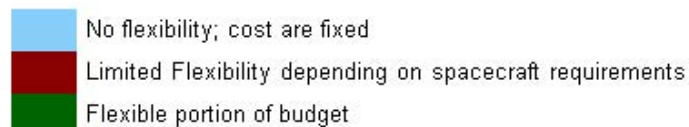
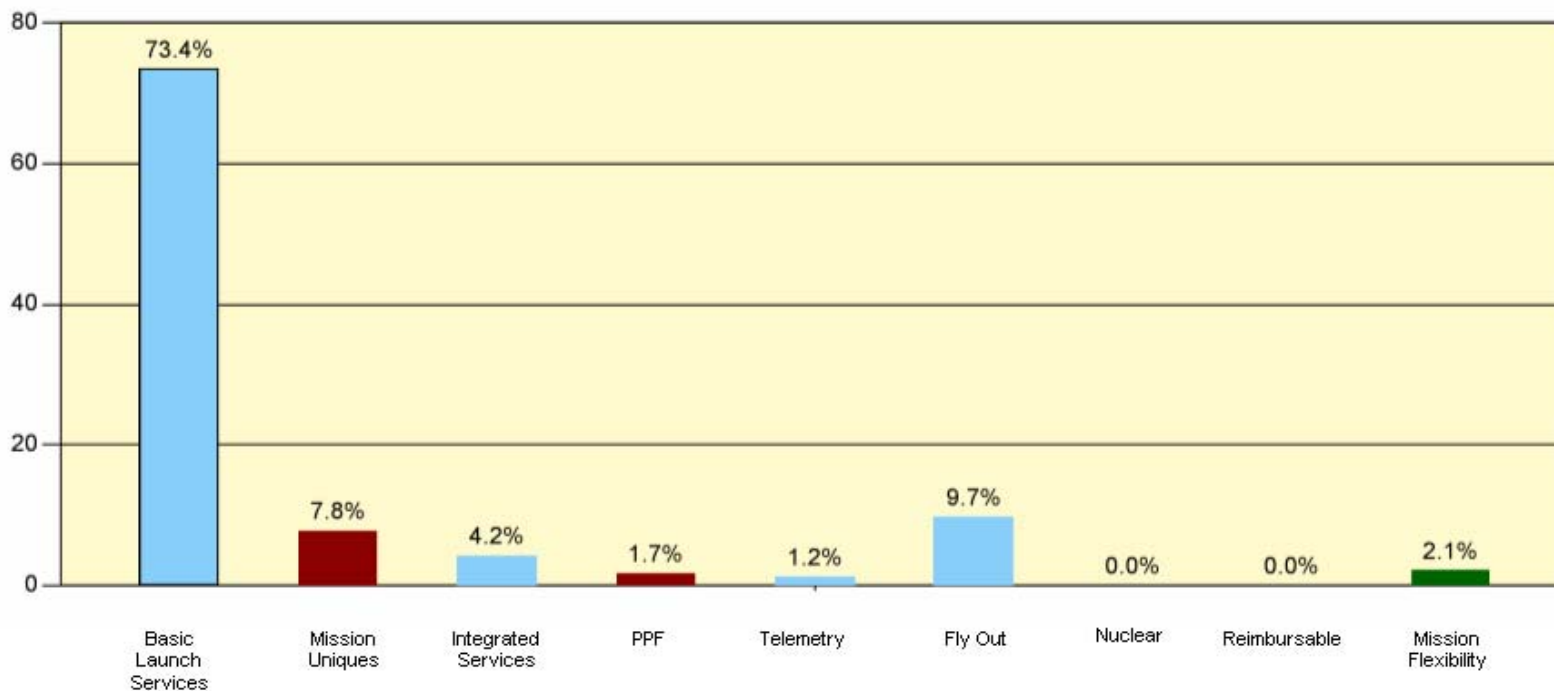
## Launch Services Budget Breakdown

OSTM Mission

Walner Thervil

### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 1 / 2008



#### Notes:

Note: Above percentages contain dollars associated with the Boeing settlement. Boeing settlement for this mission is \$367K. Variance: Change in accounting method for commercial PPF costs, which resulted in slight difference in PPF and Integrated Services percentages. Variance: Added lien for Onboard Camera system which increased Mission Uniques costs. Variance: Added lien to fund PAF inspection TA, which increased Mission Uniques costs

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## OSTM - Business

Walner Thervil

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Nov	Dec	Jan
G	G	G
G	G	0

Milestone	Date
Milestone #1	03/15/06
Milestone #2	06/15/06
Milestone #3	10/30/2006
Milestone #4	2/6/07
Milestone #5	04/4/07
Milestone #6	10/03/2007
Milestone #7	09/15/07
Milestone #8	12/15/07
Milestone #9	03/15/08
Milestone #10	06/15/08

<input type="checkbox"/>	Open Milestone Payment
<input type="checkbox"/>	Paid Milestone

### Contract Status

Launch Services		
Contract Mod	Number	Description
	163	NSS 2.1.2 - 9.5ft to 10ft PLF
	175	NSS 20.3.3 Quick Turnaround Coupled Loads
	212	Flyout costs + Mission ATP
	125	Flyout costs
	240	NSS 32.1 FY06 VAFB Launch Site Maintenance
	057	NSS 30.1 Long-lead Mat'l/Adv for NSS 33.2 Mission critical FY03
	050	Original 19-Pack Launch Date 12/31/2006
	307	NSS 10.1 Onboard Camera
	318	NSS 36.1 Telemetry Acquisition Assistance Message and Vehicle Acquisition Message

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Contract Mod (LD)	Number	Description		
	136	Delay from 12/31/06 to 10/1/07		
	159	Launch delay from 10/1/07 to 4/1/08		
	212	Delay from 4/1/08 to 6/15/08		
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	NLSB-155	OSTM Environments Effort	04/25/2005	09/30/2005
	NLSB-165	Parametric Study for Loads	08/30/2005	07/27/2005
	NLSB-165R1	Parametric Study for Loads	11/10/2005	11/02/2005
	NLSB-177R1	Passive Isolation Sys	01/17/2006	03/15/2006
	NLSB-177R2	Passive Isolation Sys	02/17/2006	03/27/2006
	NLSB-195R2	CLA for Passive Isolation Sys	06/16/2006	07/17/2006
	NLSB-225	MECO Loads Analysis	07/24/2006	09/15/2006
	NLSB-229	Spacer for Isolation System	08/31/2006	09/20/2006
	NLSB-235	Inert DPAF Proposal Prep	04/14/2006	09/11/2006
	NLSB-242	PAF Pre-production review	11/29/2006	11/20/2006
	NLSB-248	Passive Isolation System to PDR (Phase 1)	04/09/2007	06/21/2007
	NLSB-266	Isolation System Engineering Development Unit (EDU) Fabrication	03/28/2007	06/21/2007
	NLSB-272	Payload Isolation System Implementation	07/15/2008	
	NLSB-293	OSTM Ground Support Equipment Task Plan Proposal Cost.	06/15/2007	08/13/2007
	NLSB-298	OSTM Payload Attach Fitting and Clampband inspection	08/08/2007	01/07/2008
Contract Mod (PPF)	Number	Description		
	WCCPP-001	Commercial PPF (TO# NNN07LA87D)		
There are no Other Contract Mods				
There are no Issues.				

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Center

# OSTM - Safety and Mission Assurance

Craig Schreiber

## LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion			
	Complete	In Work		Nov	Dec	Jan
<b>Quality</b>				Y	Y	Y
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Continuing to monitor ULA-Boeing's response to Quality Management System risk, and possible OAD reinstallation	Y	Y	Y
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SMA is tracking no GIDEP issues at this time	G	G	G
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SMA Quality is continuing to selectively perform surveillances and audits	G	G	G
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SMA is tracking no LLI issues at this time	G	G	G
<b>Reliability</b>				G	G	G
FMEA/Fishbones/Equivalent	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues.	G	G	G
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues.	G	G	G
<b>Safety</b>				G	G	G
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Using Calipso tailoring; Range & SMA accepted	G	G	G
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues.	G	G	G
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues.	G	G	G
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Final MSPSP delivered.	G	G	G
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Waiver submitted for propulsion system, similar to Calipso S/C	G	G	G
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues.	G	G	G
<b>Mission Assurance</b>				Y	Y	Y
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues.	G	G	G
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Softride implementation, 1st use	G	G	G
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues.	G	G	G
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alenia 2nd-Stage Oxidizer Leak, inspection process ID; ULA transition	Y	Y	Y
Risk Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues.	G	G	G

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# OSTM Comm & Telemetry

Mike Patton and Alex Biamonte

LAUNCH SERVICES PROGRAM

## Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Nov	Dec	Jan
G	G	G
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

## Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Nov	Dec	Jan
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

*Sensitive But Unclassified*





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# Kepler Project Summary

## LAUNCH SERVICES PROGRAM

Mission	Kepler
Launch Date	2009/02/16
Launch Vehicle	Delta II
Launch Period Window	
PPF	Commercial PPF

### OVERALL MISSION

Nov	Dec	Jan
G	G	G

### MISSION MANAGEMENT

	Nov	Dec	Jan
Observatory Status	G	G	G
Manifest/Range	G	G	G
Integrated Schedule	G	G	G
ICD	G	G	G
CDRLs (S/C & LSC)	G	G	G

### LAUNCH SITE

	Nov	Dec	Jan
LSSP	G	G	G
Customer Inputs	G	G	G
PPF	G	G	G
Launch Site Unique	G	G	G
Spacecraft OPS	0	0	0

### SAFETY & MISSION ASSURANCE

	Nov	Dec	Jan
Mission Assurance	G	G	G
Safety	G	G	G
Quality	G	G	G
Reliability	G	G	G

### ENGINEERING

	Nov	Dec	Jan
Launch Vehicle	G	G	G
Mission Specific	G	G	G
Certification	0	0	0
Mission Analysis	G	G	G
ERS/ERB	G	G	G
Launch PAD/GSE	G	G	G
Mission Unique IV&V	0	0	0

### COMM & TELEMETRY

	Nov	Dec	Jan
Communications	G	0	G
Telemetry	0	0	0

### BUSINESS

	Nov	Dec	Jan
Budget	G	G	G
Contracts	G	0	G

### LEGEND

Proceeding on Plan  
Area of Concern  
Significant Problem  
Not Evaluated  
Not Applicable

G
Y
R
0
N/A

### DOWNRANGE TELEMETRY

	Nov	Dec	Jan
Ground Stations	0	0	0
Deployables	0	0	0
P-3/OTTR	0	0	0

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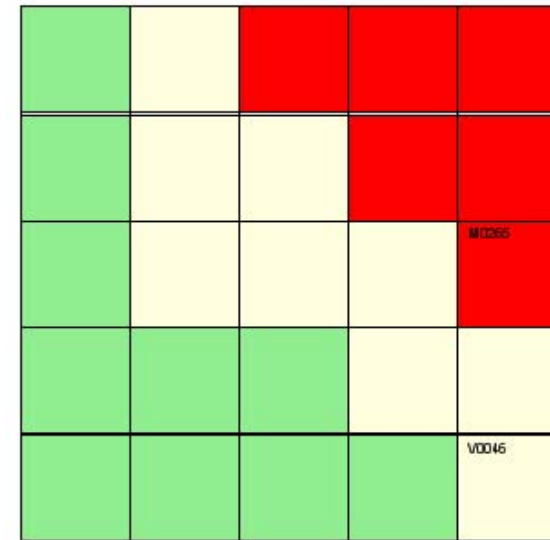
## Kepler - Open/Accepted Risks

LAUNCH SERVICES PROGRAM

		Condition
RYG	RiskID	Consequence
O	V0046	ULA/Boeing does not perform an inspection for microscopic cracks (micro cracks) before providing a spacecraft customer with a Test Payload Attach Fitting (TPAF) or clampband.
		Propagation of a micro crack(s) in the TPAF or clampband during shock or vibration testing could cause damage to the spacecraft.
O	M0265	A signed MOA and Host Tenant Agreement (HTA) for transition of SLC-17 Delta-II assets from Air Force to NASA does not currently exist.
		Without signed MOA and HTA, there will no way to quantify cost of O&M for the Kepler Mission.

P  
R  
C  
B  
  
C  
F  
  
C  
C  
C  
U  
R  
R  
E  
N  
C  
E

5  
91-100%  
4  
51-90%  
3  
11-50%  
2  
6-10%  
1  
1-5%



1 2 3 4 5

IMPACT

*Sensitive But Unclassified*



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## Kepler - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

<b>Mission Summary Map</b>	<b>G/Y/R</b>	<b>ACTIONS</b>	<b>WI/ERS/Risk/Problem</b>	<b>Open Date</b>	<b>Due Date</b>
Engineering	0	S/C considering not using the ULA ITA and doing the analysis internal to Ball. LSP proposed to convert thermal model and re-start effort to perform ITA on 23 Oct. Ball is evaluating proposal.	WI	05/15/2007	12/31/2007

<b>Mission Summary Map</b>	<b>G/Y/R</b>	<b>ISSUES / CONCERNS</b>	<b>WI/ERS/Risk/Problem</b>	<b>Open Date</b>	<b>Due Date</b>
Mission Management	0	LSP proposed dual daily launch windows flying on different to Kepler Project. Difference in flight path could increase cost for telemetry assets.	WI	10/23/2007	01/31/2008

*Sensitive But Unclassified*



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## Kepler - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
TPAF use TA on contract near term	
Received and negotiated TPAF build proposal	
Revised FY06 funding profile to assist project with 2nd Qt shortfall	
Received updated IRD	March 2006-03/03/2006
Completed LSP IRD ERB	03/20/2006
Kepler CDR	04/18/06-04/20/06
ATP planned with November 2008 launch	Nov 2006-11/01/2006
S/C to deliver updated IRD prior to ATP	Aug 2006
Kepler Delta CDR	10/16/06-10/20/06
TA in work to determine Boeing approval of S/C use of "to be negotiated" area below sep plane. Received preliminary approval from Boeing in Aug.	08/01/2006
Boeing support/training for TPAF at Ball facility	10/02/2006-10/11/2006
Provide some of the flight connectors to support Kepler Cable build schedule.	12/15/2006-12/15/2006
Received Kepler FEM to support third CLA analysis and forwarded to Boeing (Contract Mod still in work)	09/11/2006-09/13/2006
S/C to deliver thermal model for ITA, canceled activity	12/22/2006-03/09/2007
MIWG planned for Nov 16	11/16/2006-11/16/2006
GOWG on Jan 19 at Astrotech, Titusville	01/18/2007
Delivered updated Kepler IRD	02/05/2007-02/07/2007
planning kick-off MIWG, April 5 in HB	02/08/2007-04/5/2007

There are no items planned

*Sensitive But Unclassified*

ULA to deliver final set of GSE connectors to S/C	02/01/2007-02/23/2007
Draft ICD released for review	03/31/2007-4/31/2007
S/C delivered IGES files as input to Mission Compatibility. Delivered to LSC	02/14/2007-03/02/2007
MIWG/GOWG at KSC on 23-24 October	08/14/2007-10/25/2007
PMA input	11/26/2007-02/26/2008

*Sensitive But Unclassified*



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# Kepler Mission Management

Dave Breedlove

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD

*Kepler*

### ICD

There are no signed SCNs

Kepler
2009/02/16
C3 0.4 km2/sec2, Earth trailing heliocentric
Delta II
Commercial PPF
903 kg / L
Other

Nov Dec Jan

G	G	G
---	---	---

There are no SCNs in Review

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Nov Dec Jan

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

G	G	G
G	G	G
G	G	G
0	0	0
0	0	0
0	0	0

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

JPL

Leslie Livesay

Pete Darus

Dave Breedlove

Larry Craig

Mike Miller

Harold Coleman

Homero Hidalgo

Tuan Doan

José Amador, PhD

*Sensitive But Unclassified*



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# Kepler - Engineering

Larry Craig

## LAUNCH SERVICES PROGRAM

### Launch Vehicle

Payload Fairing

First Stage

Second Stage

Third Stage

Payload Attach Fitting

Other

### Mission Specific

Certification

Mission Analysis

ERS/ERB

Launch PAD/GSE

Mission Unique IV&V

Nov	Dec	Jan
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
0	0	0
G	G	G
0	0	0
G	G	G
G	G	G
G	G	G
0	0	0

### REQUIREMENT VERIFICATION STATUS

NUMBER OF REQUIREMENTS	0
VERIFIED TO DATE	0

### LAUNCH PAD / GSE MODS (IF APPLICABLE)

IRD has requirement to use GN2 purge similar to MAP

### MISSION UNIQUE STUDIES (IF APPLICABLE)

Clampband Interface Line Load Study

Interface Electrical Connector Bracket Modification

*Sensitive But Unclassified*



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## Kepler - Mission ERB Status

Larry Craig

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
0	05-379	Kepler IRD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

*Sensitive But Unclassified*





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## Kepler - Vehicle ERB Status

Larry Craig

LAUNCH SERVICES PROGRAM

There are no Vehicle ERBs for this mission.

*Sensitive But Unclassified*



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# Kepler - Launch Site

Mike Miller

## LAUNCH SERVICES PROGRAM

### LSSP

Nov Dec Jan

G	G	G
---	---	---

LSSP	Planned	Released
Preliminary	11/16/07	11/20/07
Baseline	09/09/08	

### UNIQUE REQUIREMENTS

Nov Dec Jan

#### LAUNCH SITE UNIQUE

G	G	G
---	---	---

#### PPF

G	G	G
---	---	---

### CUSTOMER INPUTS

Nov Dec Jan

G	G	G
---	---	---

### DELIVERABLES

Nov Dec Jan

Security and Badging  
Training and Personnel Cert  
Contingency Plans  
Safety LSIM  
Radiation Control  
Operational Plans

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

#### Spacecraft OPS

0	0	0
---	---	---

*Sensitive But Unclassified*



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# Kepler Budget Breakdown

Harold Coleman

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Other services directly attributable to the mission.
- Contains some flexibility except when technical risk is affected. Spacecraft requirements are the cost driver.

\* **Integrated Services**

- LSP contractor support service (ELVIS, CAPPs, JBOSC, KICs, etc).
- USAF range costs attributable to the mission
- Limited flexibility

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility;
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

\* **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.

*Sensitive But Unclassified*



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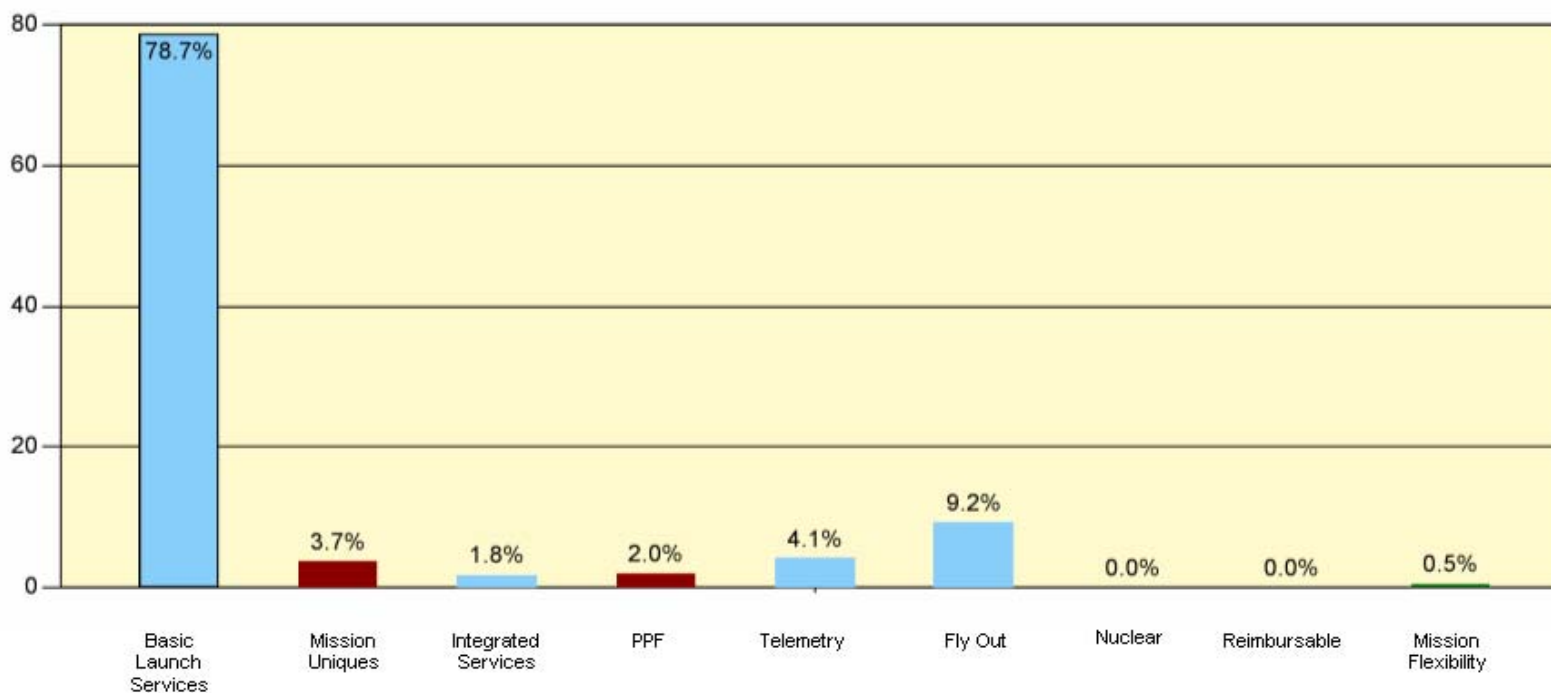
## Launch Services Budget Breakdown

### Kepler Mission

Harold Coleman

#### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 1 / 2008



- No flexibility; cost are fixed
- Limited Flexibility depending on spacecraft requirements
- Flexible portion of budget

#### Notes:

Above percentages contain dollars associated with the Boeing settlement. Boeing settlement for this mission is \$645.0K.

Variance: Change in mission flexibility due to telemetry, project requires dual daily windows for launch (change in Azimuth).

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# Kepler - Business

Harold Coleman

## LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Nov	Dec	Jan
G	G	G
G	0	G

Milestone	Date
Milestone #1	12/04/2006
Milestone #2	03/06/2007
Milestone #3	07/09/2007
Milestone #4	08/01/2007
Milestone #5	11/01/2007
Milestone #6	02/01/2008
Milestone #7	05/01/2008
Milestone #8	08/01/2008
Milestone #9	11/01/2008

<input type="checkbox"/>	Open Milestone Payment
<input checked="" type="checkbox"/>	Paid Milestone

Contract Status		
Launch Services		
Contract Mod	Number	Description
	100	NSS 20.3.3/Quick Turnaround CLA
	152	NSS 20.3.2 Preliminary Performance/Trajectory Analysis
	178	NSS 20.3.4 Final Design Load Cycle
	125	NSS 33.1 Post Production Support CY05 (flyout)
	229	KEPLER Test Payload Attach Fitting (PAF)
	242	NSS 20.2 Early MIWG NSS 20.3.2 Preliminary Performance/Trajectory Analysis NSS 20.3.3 Quick Turnaround Coupled Loads Analysis
	125	NSS 30.1 Long-lead Mat'l/Adv NSS 33.1 Post Prod Spt (FY05)
	255	CLIN 21 Kepler Basic Launch Service
	255	NSS 2.1.1 Replace 10-ft w/10L PLF

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Contract Mod	Number	Description		
	255	NSS 20.1 Pedigree Review		
	255	NSS 20.3.4 Final Design Load Analysis		
	255	NSS 9.1.2 Two 61-pin connectors		
	255	NSS 2.1.2 Replace 9ft Fairing with 10ft Fairing		
	0272	Cancel NSS 20.3.2 Preliminary Performance/Trajectory Analysis		
	255	ATP Mission		
	240	NSS 32.1 VAFB Launch Site O&M and NSS 33.1 Post Production Support		
	0306	Launch delay from 11/01/08 to 02/16/09.		
There are no LD Contract Mods				
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	NLSB-210R1	TPAF Support	11/1/2006	01/17/2007
	NLSB-221	TA NLSB-254 HGA Relocation Evaluation	09/15/2006	09/20/2006
	NLSB-245R1	61-Pin Connectors additional Material	12/18/2006	01/17/2007
	NLSB-253	Additional Integrated Thermal Analysis.	03/01/2007	03/19/2007
	NLSB-286	Kepler Line-Load Analysis	06/08/2007	01/08/2008
There are no PPF Contract Mods				
There are no Other Contract Mods				
There are no Issues.				

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Center

# Kepler - Safety and Mission Assurance

Homero Hidalgo

## LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion			
	Complete	In Work		Nov	Dec	Jan
<b>Quality</b>				G	G	G
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Activity	0	0	0
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Activity	0	0	0
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Activity	0	0	0
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Activity	0	0	0
<b>Reliability</b>				G	G	G
FMEA/Fishbones/Equivalent	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Activity	0	0	0
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reliability data gathering in work (No issues as of 9/11/06)	0	0	0
<b>Safety</b>				G	G	G
Requirements Definitions	<input checked="" type="checkbox"/>	<input type="checkbox"/>		0	0	0
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	0	0	0
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	0	0	0
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	0	0	0
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No status	0	0	0
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No status	0	0	0
<b>Mission Assurance</b>				G	G	G
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No activity	0	0	0
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	no activity	0	0	0
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No activity	0	0	0
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No activity	0	0	0
Risk Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No activity	0	0	0

*Sensitive But Unclassified*



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# Kepler Comm & Telemetry

Tuan Doan and José Amador, PhD

LAUNCH SERVICES PROGRAM

## Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Nov	Dec	Jan
G	0	G
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

## Telemetry

Decommutation Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Nov	Dec	Jan
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

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# WISE Project Summary

## LAUNCH SERVICES PROGRAM

Mission	WISE
Launch Date	2009/11/01
Launch Vehicle	Delta II
Launch Period Window	Any day of year
PPF	Commercial PPF

### OVERALL MISSION

Nov	Dec	Jan
G	G	G

### MISSION MANAGEMENT

	Nov	Dec	Jan
Observatory Status	G	G	G
Manifest/Range	G	G	G
Integrated Schedule	G	G	G
ICD	G	G	G
CDRLs (S/C & LSC)	G	G	G

### LAUNCH SITE

	Nov	Dec	Jan
LSSP	G	G	G
Customer Inputs	G	G	G
PPF	G	G	G
Launch Site Unique	G	G	G
Spacecraft OPS	G	G	G

### SAFETY & MISSION ASSURANCE

	Nov	Dec	Jan
Mission Assurance	Y	Y	Y
Safety	G	G	G
Quality	Y	Y	Y
Reliability	G	G	G

### ENGINEERING

	Nov	Dec	Jan
Launch Vehicle	G	G	G
Mission Specific	G	G	G
Certification	G	G	G
Mission Analysis	G	G	G
ERS/ERB	G	G	G
Launch PAD/GSE	Y	Y	Y
Mission Unique IV&V	N/A	N/A	N/A

### COMM & TELEMETRY

	Nov	Dec	Jan
Communications	G	G	G
Telemetry	0	0	0

### BUSINESS

	Nov	Dec	Jan
Budget	G	G	G
Contracts	G	0	G

### LEGEND

Proceeding on Plan  
Area of Concern  
Significant Problem  
Not Evaluated  
Not Applicable

G
Y
R
0
N/A

### DOWNRANGE TELEMETRY

	Nov	Dec	Jan
Ground Stations	G	G	G
Deployables	G	G	G
P-3/OTTR	G	G	G

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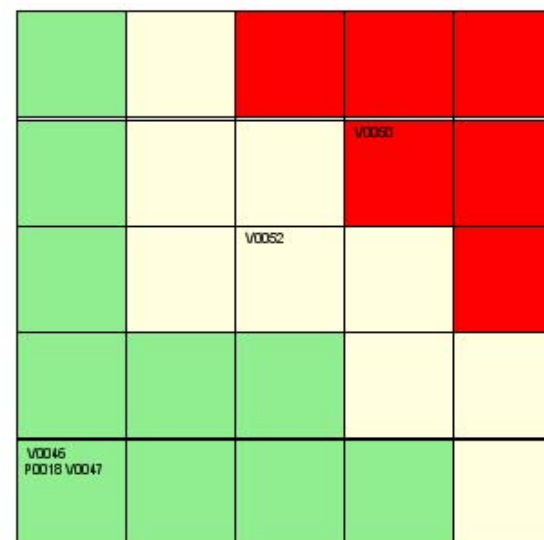
## WISE - Open/Accepted Risks

### LAUNCH SERVICES PROGRAM

		Condition
RYG Trend	RiskID	Consequence
G	V0046	ULA/Boeing does not perform an inspection for microscopic cracks before providing a spacecraft customer with a test payload attach fitting (TPAF) or clampband.
		Propagation of a micro crack(s) in the TPAF or clampband during shock or vibration testing could cause damage to the spacecraft. Update 11/9/07 JOH: SOW in work to perform dye-pen inspection of the TPAF to check for cracks. (12/3/07, JOH update) TA to perform the PAF and associated Clampband inspection has been released. Delivery of the PAF/Clampband to the S/C Project is expected by 1/20/08.
G	V0052	LS SMA has noted human error and process issues that indicate that Boeing's quality management system corrective actions are not preventing re-occurrence.
		The re-occurrence of undetected human errors and process problems can lead to major damage or loss of flight hardware or GSE.
G	V0050	Dawn experienced a significant delay very late in the hardware production process that delayed the launch readiness date. The same contributing causes exist for other NASA missions.
		Possible delay of other NASA missions.

P  
R  
C  
B  
  
C  
F  
  
C  
C  
C  
U  
R  
R  
E  
N  
C  
E

5  
91-100%  
4  
51-90%  
3  
11-50%  
2  
6-10%  
1  
1-5%



1 2 3 4 5  
IMPACT

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G	P0018	Traditional DMCO Testing (Bldg AO on CCAFS) on Commercial and NASA Delta II launch vehicles will be eliminated. Required testing that has historically been performed in DMCO will be transferred to the launch pad as part of the "DMCO On-Pad Initiative."
		Elimination of traditional DMCO Testing will not allow for capturing hardware failures off-pad, and thus introduce potential for on-pad schedule delays of more than one key milestone if hardware fails during pad testing.
G	V0047	Failure analysis of a Pacific Scientific PN 107800-201detonator (SN 4498) that failed service life extension testing uncovered a manufacturing process vulnerability in which detonators could be reworked and inadvertently returned to production without the correct load of explosive material.
		Failure to initiate FTS destruct ordnance chain on command.



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## WISE - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

There are no Actions.

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/ Problem	Open Date	Due Date
Mission Management	G	The study for hydrogen safety vent stack and cryogenic GSE logistics at SLC-2W has been initiated with a 3 mo POP beginning 8/9/07. Item will continue to be monitored closely due to it's criticality. TIM expected in mid-Dec 07.	WI	07/16/2007	12/14/2007
Engineering	G	ULA/Boeing does not perform an inspection for microscopic cracks before providing a spacecraft customer with a test payload attach fitting (TPAF) or clampband. Propagation of micro cracks in the TPAF or clampband during shock or vibration testing could cause damage to the spacecraft.  (12/3/07, JOH update) TA to perform the TPAF and associated Clampband inspection has been released. Delivery of the PAF/Clampband to the S/C Project is expected by 1/20/08.	Risk V0046	8/31/07	01/01/2008
Engineering	G	LS SMA has noted human error and processing issues that indicate that Boeing's quality management system corrective actions are not preventing re-occurrence. The re-occurrence of undetected human errors and process problems can lead to major damage or loss of flight hardware or GSE.	Risk V0052	8/31/07	
Engineering	G	DAWN experienced a significant delay very late in the hardware production process that delayed the launch readiness date. The same contributing causes exist for other NASA missions. Possible delay for other NASA missions.	Risk V0050	8/31/07	
Engineering	G	Traditional DMCO Testing (Bldg AO on CCAFS) on Commercial and NASA Delta II launch vehicles will be eliminated. Required testing that has historically been performed in DMCO will be transferred to the launch pad as part of the "DMCO On-Pad Initiative." Elimination of traditional DMCO testing will not allow for capturing hardware failures off-pad, and thus introduce potential for on-pad schedule delays of more than one key milestone if hardware fails during pad testing.	Risk P0018	8/31/07	

*Sensitive But Unclassified*

<b>Mission Summary Map</b>	<b>G/Y/R</b>	<b>ISSUES / CONCERNS</b>	<b>WI/ERS/Risk/ Problem</b>	<b>Open Date</b>	<b>Due Date</b>
Engineering	Y	Kick off MIWG Strength results for Flight Design Load Cycle (FDLC) reported low strength margin of safety. Clampband gapping margin of safety is low. Clampband pre-load required is high. This drives a higher than expected shock load. Analysis used 200 lbf sep springs instead of 100 lbf. Discussion of dynamic uncertainty factor (DUF) is in work.	WI	10/3/07	Apr 08

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## WISE - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
Quick turn around CLA on contract	Mar 06
S/C Questionnaire transmittal to ULA	10/31/2007
Early MIWG/GOWG	Nov 06
Confirmation Review	Oct 06
Authority To Proceed (ATP) w/27 mo integration cycle.	08/01/2007
S/C CDR	4/3/07
Hydrogen and Cryo GSE study	08/09/2007-12/12/2007
Mission CDR	06/20/2007
PRCB for ATP Concurrence	07/27/2007
Kickoff MIWG	10/3/07
Mission Turn On ERB	7/31/07-7/31/07
Vent Stack TIM at VAFB	12/12/2007

Planned	
MIWG @ KSC	2/20/08

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# WISE Mission Management

Armando Piloto

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD

WISE
2009/11/01
725km sun sync 6 am or pm ascending node
Delta II
Any day of year
Commercial PPF
1387
SLC-2

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Nov Dec Jan

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

JPL

Explorer

Bill Irace

Pete Darus

Armando Piloto

Jim Hoffman

Jeffrey Ehram

Harold Coleman

Homero Hidalgo

Tuan Doan

José Amador, PhD



### ICD

Nov Dec Jan

G	G	G
---	---	---

There are no signed  
SCNs

There are no SCNs in  
Review

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

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## WISE - Engineering

Jim Hoffman

### LAUNCH SERVICES PROGRAM

	Nov	Dec	Jan
<b>Launch Vehicle</b>	G	G	G
Payload Fairing	G	G	G
First Stage	G	G	G
Second Stage	G	G	G
Third Stage	N/A	N/A	N/A
Payload Attach Fitting	Y	Y	Y
Other	0	N/A	N/A
<b>Mission Specific</b>	G	G	G
<b>Certification</b>	G	G	G
<b>Mission Analysis</b>	G	G	G
<b>ERS/ERB</b>	G	G	G
<b>Launch PAD/GSE</b>	Y	Y	Y
<b>Mission Unique IV&amp;V</b>	N/A	N/A	N/A

#### REQUIREMENT VERIFICATION STATUS

NUMBER OF REQUIREMENTS	0
VERIFIED TO DATE	0

#### LAUNCH PAD / GSE MODS (IF APPLICABLE)

Evaluating the pad impacts of servicing the S/C Hydrogen Cryostat

#### MISSION UNIQUE STUDIES (IF APPLICABLE)

Evaluating methods to reduce the high lateral loads CLA results

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## WISE - Mission ERB Status

Jim Hoffman

### LAUNCH SERVICES PROGRAM

			ERB Req?		Board Held?			Closure		
R/Y/G	ERS #	TITLE	Y	N	Y	N	N/A	AI	ENG.	OCE
G	ERS-07-186	Mission Turn-on ERB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G	ERS-07-272	Mission ICD ERB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## WISE - Vehicle ERB Status

Jim Hoffman

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	ERS-02-09	Outgassing Potential of DII Payload Environment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-02-49	Camera to Verify Cleanliness of Delta II Fairing Separation Events.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-06-113	Safe and Arm Detonator Assembly	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-07-160	Delta II Payload Fairing Debris Containment Fillet Seal Issues	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Sensitive But Unclassified*



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# WISE - Launch Site

Jeffrey Ehram

## LAUNCH SERVICES PROGRAM

### LSSP

Nov Dec Jan

G	G	G
---	---	---

LSSP	Planned	Released
Preliminary	07/01/2008	
Baseline	06/01/2009	

### CUSTOMER INPUTS

Nov Dec Jan

G	G	G
---	---	---

### DELIVERABLES

Nov Dec Jan

Security and Badging  
Training and Personnel Cert  
Contingency Plans  
Safety LSIM  
Radiation Control  
Operational Plans

G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### UNIQUE REQUIREMENTS

#### LAUNCH SITE UNIQUE

Two 500liter dewars of liquid helium to be replaced every day on Level 5 at SLC-2. Level 5 modifications required. Initial Study TA scheduled for completion on 12 Dec 2007.

Design/Install hydrogen vent stack at PPF, SLC-2 MST and Boeing Can. Initial Study TA shows MSX vent design satisfactory. Next step is fabrication TA.

#### PPF

#### Spacecraft OPS

Nov Dec Jan

G	G	G
---	---	---

G	G	G
---	---	---

G	G	G
---	---	---

G	G	G
---	---	---

G	G	G
---	---	---

*Sensitive But Unclassified*



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# WISE Budget Breakdown

Harold Coleman

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.

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- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

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- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

\* **Mission Flexibility**

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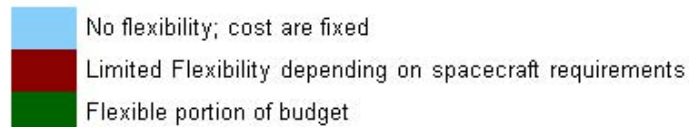
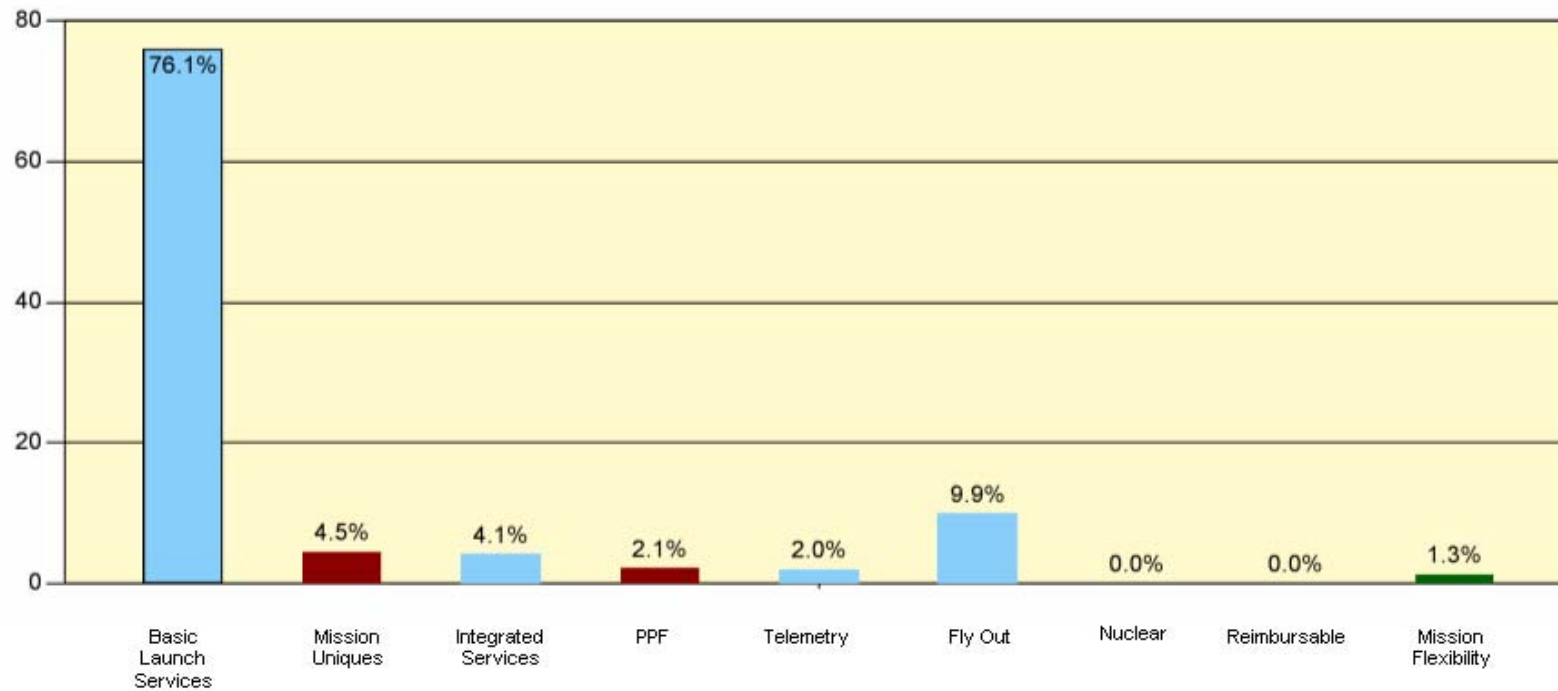
## Launch Services Budget Breakdown

WISE Mission

Harold Coleman

LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 1 / 2008



Notes:

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## WISE - Business

Harold Coleman

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Nov	Dec	Jan
G	G	G
G	0	G

Milestone	Date
Milestone 1	09/26/2007
Milestone 2	
Milestone 3	
Milestone 4	
Milestone 5	
Milestone 6	
Milestone 7	
Milestone 8	
Milestone 9	

<input type="checkbox"/>	Open Milestone Payment
<input checked="" type="checkbox"/>	Paid Milestone

### Contract Status

Launch Services

Contract Mod	Number	Description
	NLSB-60	12/11/02 FPB directed change in MIDEX-6 (CLIN 25) Vehicle config. From 2420-10 to 2425-10
	NLSB-191	8/26/05 FPB directed the renaming of CLIN 25 from MIDEX-6 to "WISE"; establishment of the launch site as VAFB; and change of vehicle config. From 2425-10 to 2320-10
	NLSB-214	NSS 20.3.3 Early CLA
	NLSB-236	12/6/2005 FPB directed change to WISE Launch Date from 3/31/08 to 6/14/09
	NLSB-242	NSS 20.2 Early MIWG
	NLS-B 257	NSS 20.3.4 Final Design Load Cycle
	NLSB-265	Adjust launch date from June 14, 2009 to November 1, 2009.
	295	ATP Mission
	295	NSS 30.2 Long Lead Material Liquidation Credit
	295	NSS 2.2.3 Additional 42-inch diameter door

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Contract Mod	Number	Description		
	295	NSS 3.1.3 3715C Payload Adapter		
	295	NSS 35.2 Additional 40 Mission Console Notebooks		
	295	NSS 20.1 Pedigree Review		
	295	NSS 27.1 Western Range (WR) Launch Incremental		
	125	NSS 30.1 Long-lead Mat'l/Adv NSS 33.1 Post Prod Support		
	240	NSS 32.1 VAFB Launch Site O&M and NSS 33.1 Post Production		
There are no LD Contract Mods				
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	NLSB-0299	Hydrogen safety vent stack study and cryogenic GSE logistics on the SLC-2 mobile service tower	11/10/2007	
	NLSB-304	37-Pin electrical connectors	10/04/2007	
There are no PPF Contract Mods				
There are no Other Contract Mods				
There are no Issues.				

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Center

# WISE - Safety and Mission Assurance

Homero Hidalgo

## LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion			
	Complete	In Work		Nov	Dec	Jan
<b>Quality</b>				Y	Y	Y
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Continuing to monitor ULA-Boeing's response to Quality Management System risk, and possible OAD reinstallation	Y	Y	Y
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SMA is tracking no GIDEP issues at this time.	G	G	G
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SMA Quality is continuing to selectively perform surveillances and audits	G	G	G
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SMA is tracking no LLI issues at this time	G	G	G
<b>Reliability</b>				G	G	G
FMEA/Fishbones/Equivalent	<input type="checkbox"/>	<input checked="" type="checkbox"/>		G	G	0
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>		G	G	G
<b>Safety</b>				G	G	G
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues at this time	G	G	G
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues at this time	G	G	G
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues at this time	G	G	G
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues at this time	G	G	G
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues at this time	G	G	G
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues at this time	G	G	G
<b>Mission Assurance</b>				Y	Y	Y
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues at this time	G	G	G
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cryo Vent Stack effort in progress; no current issues	G	G	G
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues at this time	G	G	G
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alenia 2nd-Stage Oxidizer Leak, inspection process ID; ULA transition	Y	Y	Y
Risk Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No Issues at this time	G	G	G

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# WISE Comm & Telemetry

Tuan Doan and José Amador, PhD

LAUNCH SERVICES PROGRAM

## Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Nov	Dec	Jan
G	G	G
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

## Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Nov	Dec	Jan
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

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# Aquarius Project Summary

## LAUNCH SERVICES PROGRAM

Mission	Aquarius
Launch Date	2010/05/23
Launch Vehicle	Delta II
Launch Period Window	
PPF	Commercial PPF

### OVERALL MISSION

Nov	Dec	Jan
0	0	0

### MISSION MANAGEMENT

Observatory Status  
Manifest/Range  
Integrated Schedule  
ICD  
CDRLs (S/C & LSC)

Nov	Dec	Jan
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

### LAUNCH SITE

LSSP  
Customer Inputs  
PPF  
Launch Site Unique  
Spacecraft OPS

Nov	Dec	Jan
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### SAFETY & MISSION ASSURANCE

Mission Assurance  
Safety  
Quality  
Reliability

Nov	Dec	Jan
G	0	G
G	0	G
G	0	G
G	0	G

### ENGINEERING

Launch Vehicle  
Mission Specific  
Certification  
Mission Analysis  
ERS/ERB  
Launch PAD/GSE  
Mission Unique IV&V

G	0	G
G	0	G
0	0	0
G	0	G
G	0	G
0	0	0

### COMM & TELEMETRY

Communications  
Telemetry

G	0	G
0	0	0

### BUSINESS

Budget  
Contracts

Y	0	0
G	0	0

### LEGEND

Proceeding on Plan  
Area of Concern  
Significant Problem  
Not Evaluated  
Not Applicable

G
Y
R
0
N/A

### DOWNRANGE TELEMETRY

Ground Stations  
Deployables  
P-3/OTTR

0	0	0
0	0	0
0	0	0

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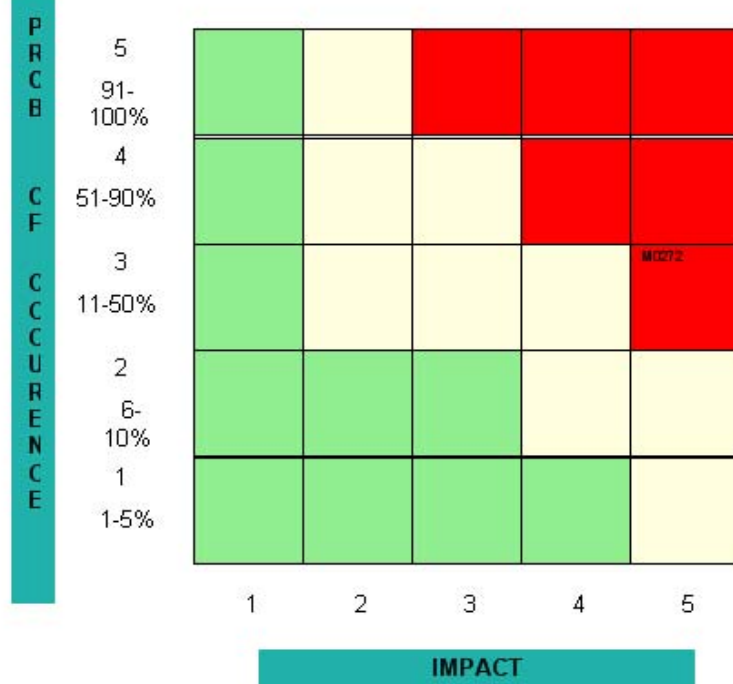


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## Aquarius - Open/Accepted Risks

### LAUNCH SERVICES PROGRAM

		Condition
RYG	RiskID	Consequence
Trend		
0	M0272	The proposed launch date for Aquarius is May, 2010. There are no CY2010 contract prices for SLC-2 Delta II O&M or post-production support on the NLS contract.
		Without CY2010 prices in place, there will be a break in O&M support at the pad. Also, there is currently not a quantified cost for the launch pad support that will be paid for by the Aquarius mission.



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## Aquarius - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

There are no Actions.

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/Problem	Open Date	Due Date
Mission Management	0	Mission LRD moved to July 09, still further risk of moving with possible LRD in 2010. Mission LRD planing date now 22 May 2010, FPB action to confirm date by Oct 5, 2007. PMC planned for 30 October at HQ	WI	01/10/2007	11/02/2007
Business	0	Possible increased LV and O&M costs due to proposed LRD in 2010,	WI	09/19/2007	11/30/2007

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## Aquarius - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
Instrument PDR	06/28/2005-06/30/2005
Spacecraft PDR	08/03/2005-08/04/2005
Mission Confirmation Review held	09/28/2005
Program Intro / Range Concept Briefing at VAFB	12/16/2005
Quick turnaround CLA	
Instrument CDR at JPL	09/18/2006-09/22/2006
TFA data delivery	9/11/2006
Deliver Final SSPP and Initial MSPSP to the Range	09/15/2006
JPL to perform RF monitoring at SSI and Astrotech	08/30/2006-08/31/2006

Planned	
ATP with ULA	Nov 2007
Kick-Off Meeting with ULA	March 2008
SC CDR	March 2008
Mission CDR	April 2008
IRD	07/13/2007-10/12/2007
Integrated Schedule	Dec 2007
Ground Ops/Launch vehicle TIM	October 2007
Full CLA planned prior to ATP	09/03/2007-12/10/2007
DPMC on schedule re-plan on 16 November	11/16/2007-11/30/2007
ATP for mission	11/30/2007-11/30/2007

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# Aquarius Mission Management

Dave Breedlove

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD

Aquarius
2010/05/23
Sun Sync
Delta II
Commercial PPF
1675
SLC-2

AQUARIUS

### ICD

There are no signed SCNs

Nov Dec Jan

0	0	0
---	---	---

There are no SCNs in Review

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Nov Dec Jan

0	0	0
0	0	0
Y	0	0
0	0	0
0	0	0
0	0	0
0	0	0

### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

JPL

ESSP

Amit Senn

Mike Davis

Dave Breedlove

Norman Beck, Jr.

Mark Mertz

Shaqueena Lewis

Michael Johnson

Robert McEntire

Nathan Wood

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## Aquarius - Engineering

Norman Beck, Jr.

### LAUNCH SERVICES PROGRAM

	Nov	Dec	Jan
<b>Launch Vehicle</b>	G	0	G
Payload Fairing	G	0	G
First Stage	G	0	G
Second Stage	G	0	G
Third Stage	0	0	N/A
Payload Attach Fitting	G	0	G
Other	G	0	G
<b>Mission Specific</b>	G	0	G
<b>Certification</b>	0	0	0
<b>Mission Analysis</b>	G	0	G
ERS/ERB	G	0	G
Launch PAD/GSE	G	0	G
<b>Mission Unique IV&amp;V</b>	0	0	0

REQUIREMENT VERIFICATION STATUS	
NUMBER OF REQUIREMENTS	0
VERIFIED TO DATE	0

LAUNCH PAD / GSE MODS (IF APPLICABLE)
Launch PAD sustainment support into 2010

MISSION UNIQUE STUDIES (IF APPLICABLE)
There are none.

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## Aquarius - Mission ERB Status

Norman Beck, Jr.

LAUNCH SERVICES PROGRAM

There are no Mission ERBs for this mission.

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## Aquarius - Vehicle ERB Status

Norman Beck, Jr.

LAUNCH SERVICES PROGRAM

There are no Vehicle ERBs for this mission.

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# Aquarius - Launch Site

Mark Mertz

## LAUNCH SERVICES PROGRAM

	Nov	Dec	Jan
<b>LSSP</b>	G	G	G

LSSP	Planned	Released
Preliminary	11/2008	
Baseline	9/2009	

	Nov	Dec	Jan
<b>CUSTOMER INPUTS</b>	G	G	G

DELIVERABLES	Nov	Dec	Jan
Security and Badging	G	G	G
Training and Personnel Cert	G	G	G
Contingency Plans	G	G	G
Safety LSIM	G	G	G
Radiation Control	G	G	G
Operational Plans	G	G	G

## UNIQUE REQUIREMENTS

	Nov	Dec	Jan
<b>LAUNCH SITE UNIQUE</b>	G	G	G
Propellant Services	G	G	G
<b>PPF</b>	G	G	G
<b>Spacecraft OPS</b>	G	G	G

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# Aquarius Budget Breakdown

Shaqueena Lewis

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Contains some flexibility except when technical risk is affected. Spacecraft requirements are the cost driver.

\* **Integrated Services**

- LSP contractor support service (ELVIS, CAPPS, JBOSC, KICs, etc).
- USAF range costs attributable to the mission

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility;
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

\* **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.

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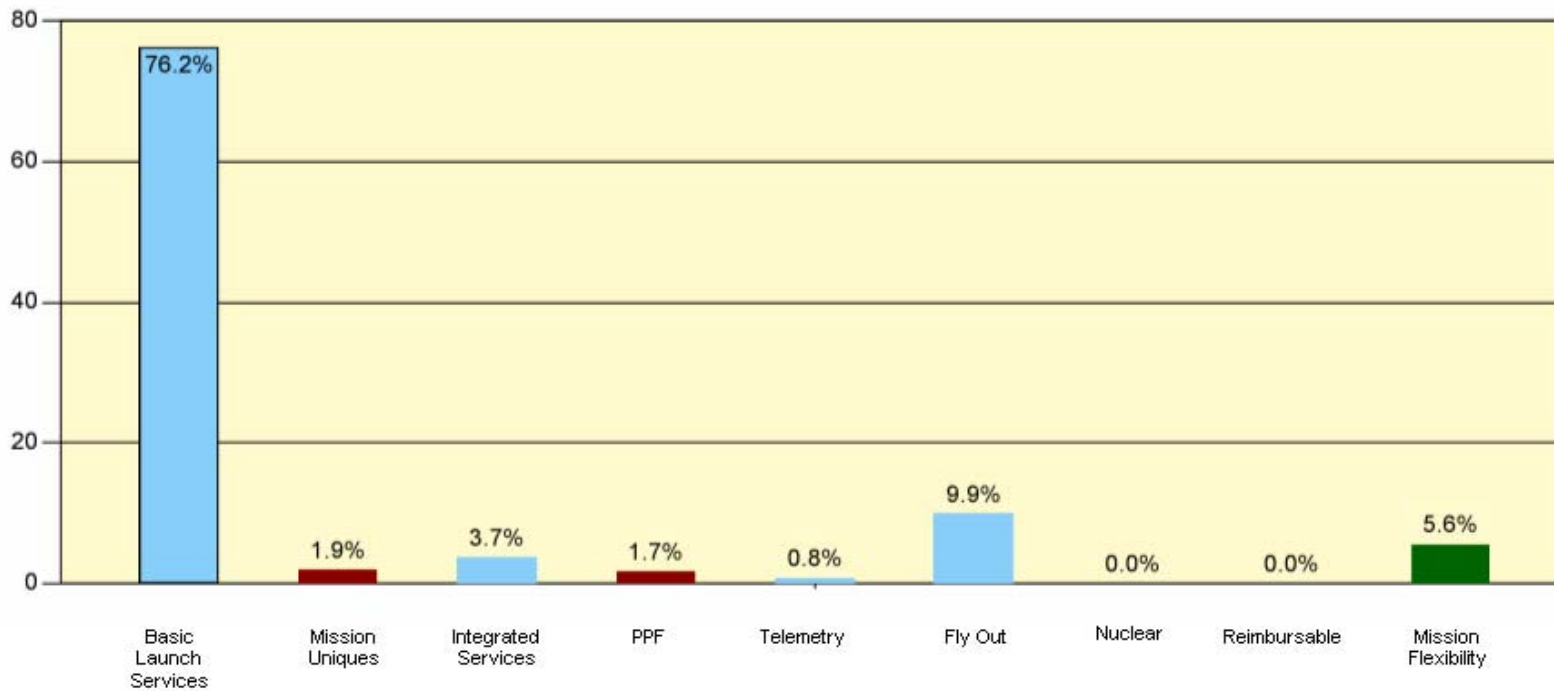
## Launch Services Budget Breakdown

Aquarius Mission

Shaqueena Lewis

### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 1 / 2008



- No flexibility; cost are fixed
- Limited Flexibility depending on spacecraft requirements
- Flexible portion of budget

Notes:

Notes: Mission scheduled to ATP in November 2007.

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## Aquarius - Business

Shaqueena Lewis

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Nov	Dec	Jan
Y	0	0
G	0	0

Milestone	Date
Milestone 1	11/23/2007
Milestone 2	02/23/2008
Milestone 3	05/23/2008
Milestone 4	08/23/2008
Milestone 5	11/23/2008
Milestone 6	02/23/2009
Milestone 7	05/23/2009
Milestone 8	08/23/2009
Milestone 9	11/23/2009
Milestone: 10	02/23/2010
Milestone: 11	05/23/2010

<input type="checkbox"/>	Open Milestone Payment
<input type="checkbox"/>	Paid Milestone

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Contract Status				
Launch Services				
Contract Mod	Number	Description		
	NLSB 219	NSS 20.2.3 Early Trajectory Analysis		
	NLSB 201	NSS 20.3.3 Quick Turnaround CLA		
	NLSB 311	NSS 20.3.4 Final Design Load Cycle		
Contract Mod (LD)	Number	Description		
	076	Delay from 9/07 to NET 3/1/08		
	136	Delay from 3/08 to 9/08		
	235	Delay from 9/30/08 to 3/23/09		
	264	Delay from 3/23/09 to 7/14/2009		
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	NLSB 178	Range Introduction meeting support	12/16/2005	01/06/2006
	NLSB 180	Accelerated Time Histories	03/10/2006	04/07/2006
	NLSB 197	Pre-ATP Support (export docs, travel)	4/30/2007	
	NLSB 208	Pre-ATP Shipping	12/31/2007	
There are no PPF Contract Mods				
Contract Mod (Other)	Number	Description		
	NLSB 125	NSS 30.1 FY05 Flyout Costs		
	Issues			
0	First Delta II launch in 2010. Launch Pad maintenance cost and Post-production support costs are currently not fully known			

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# Aquarius - Safety and Mission Assurance

Michael Johnson

## LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion			
	Complete	In Work		Nov	Dec	Jan
<b>Quality</b>				G	0	G
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
<b>Reliability</b>				G	0	G
FMEA/Fishbones/Equivalent	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
<b>Safety</b>				G	0	G
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
<b>Mission Assurance</b>				G	0	G
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G
Risk Management	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues at this time	G	0	G

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# Aquarius Comm & Telemetry

Robert McEntire and Nathan Wood

LAUNCH SERVICES PROGRAM

## Communications

Voice Comm  
Data Comm  
Networks  
Video Comm  
Timing  
RF Comm  
LSSP Comm Annex

Nov	Dec	Jan
G	0	G
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

## Telemetry

Decommuration Tables  
Data Integrity Test  
Software Lockdown  
Software Inventory  
Console Configuration  
Console Checkout

Nov	Dec	Jan
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

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# OCO Project Summary

## LAUNCH SERVICES PROGRAM

Mission	OCO
Launch Date	2008/12/15
Launch Vehicle	Taurus
Launch Period Window	TBD
PPF	ASO-VAFB

### OVERALL MISSION

Nov	Dec	Jan
Y	Y	Y

### MISSION MANAGEMENT

Observatory Status  
Manifest/Range  
Integrated Schedule  
ICD  
CDRLs (S/C & LSC)

Nov	Dec	Jan
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### LAUNCH SITE

LSSP  
Customer Inputs  
PPF  
Launch Site Unique  
Spacecraft OPS

Nov	Dec	Jan
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

### SAFETY & MISSION ASSURANCE

Mission Assurance  
Safety  
Quality  
Reliability

Nov	Dec	Jan
G	G	G
G	G	G
Y	Y	Y
G	G	G

### ENGINEERING

Launch Vehicle  
Mission Specific  
Certification  
Mission Analysis  
ERS/ERB  
Launch PAD/GSE  
Mission Unique IV&V

G	G	G
Y	Y	Y
Y	Y	Y
G	G	G
G	G	G
G	G	G
N/A	N/A	N/A

### COMM & TELEMETRY

Communications  
Telemetry

G	G	G
0	0	0

### BUSINESS

Budget  
Contracts

G	G	G
G	G	G

### LEGEND

Proceeding on Plan  
Area of Concern  
Significant Problem  
Not Evaluated  
Not Applicable

G
Y
R
0
N/A

### DOWNRANGE TELEMETRY

Ground Stations  
Deployables  
P-3/OTTR

0	0	0
0	0	0
0	0	0

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## OCO - Open/Accepted Risks

LAUNCH SERVICES PROGRAM

		Condition
RYG Trend	RiskID	Consequence
G	M0264	The OCO and Glory payload fairing (PLF) production schedules are ahead of the Ballast Ring Mission Unique design reviews. The outcome of the ballast ring design process impacts the location of the PLF doors which are described in the Mechanical ICDs.
		If the Ballast Ring design changes as an outcome of the design review process the OCO and Glory PLF cutouts (as defined in the MICD change) may not be located in the correct position to support S/C access after PLF installation. Or, if the MICD is not approved by NASA, cost and schedule of PLF manufacturing may be impacted.
G	P0022	NASA Atlas and Taurus missions not spaced properly.
		definite shifts in NASA FPB manifest dates for missions affected.
G	M0275	The planned OCO Softride qualification testing levels envelope the expected flight vibration levels but not the higher S/C system vibration test levels.
		OCO spacecraft vibe may be delayed until OCO softride can be qualified to the higher levels.

P  
R  
C  
B  
  
C  
F  
  
C  
C  
C  
U  
R  
R  
E  
N  
C  
E

5  
91-  
100%  
4  
51-90%  
3  
11-50%  
2  
6-  
10%  
1  
1-5%



1 2 3 4 5  
IMPACT

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## OCO - Actions / Issues / Concerns

### LAUNCH SERVICES PROGRAM

Mission Summary Map	G/Y/R	ACTIONS	WI/ERS/Risk/ Problem	Open Date	Due Date
Engineering	G	OCO Ballast Ring MUPDR identified potential issue of orbital debris survival of the stainless steel weights used to tailor the ballast ring mass. LSP and JSC analysis performed. Need to assess changing material selection of these bolt on mass rings. Telecon planned 9/17/07. Update 11/9/07 JBM: JSC analysis was indeterminate. KSC-LSG team assessed aluminum vs. stainless for mass inserts. Keep stainless. Modify stainless inserts to 22 degree arc length not 180 deg.	WI	9/17/07	1/31/08

Mission Summary Map	G/Y/R	ISSUES / CONCERNS	WI/ERS/Risk/ Problem	Open Date	Due Date
Engineering	G	S/C Electrical reqmts exceed Taurus umb capability at pad. Orbital LSG developing mod to umbilicals. 2/12/07 GM, received prelim design from Orbital, in eng assessment. 6/13/07 GM ERB scheduled Sep 07. 9/17/07 JBM Sep 07 ERB postponed.	ERS-06-328	05/03/2006	3/31/2008
Engineering	G	Decision on moment arm/dispersion solution due by April 20 per LSG request. Received ROM for Option B and C. Option A eliminated by LSP due to S/C insertion dispersion issues. GM, Option C stage 3 ballast SOW sent out to LSG, waiting for proposal. 06/13/07 GM waiting for ATP, MURR scheduled 6/28/07. Update 7/2/07: Proposal in hand a KSC, ATP by 7/5/07 Update 8/13/07: MURR held 7/12/07. MUPDR held 8/28/07. MUCDR tentatively Jan. 08	WI	03/13/2007	01/31/2008
Engineering	G	OCO Softride NSS is not covered under generic Taurus cert. SOW initiated to ensure Softride qualification includes proper levels and configurations for OCO/T8, awaiting response. Softride qual is needed prior to planning and use of isolators during spacecraft environmental testing. Update 11/9/07 JBM: SOW to build and qualify isolators in negotiation. Time required for negotiations is creating schedule risk. Joint OCO/Glory CDR planned 11/29/07, schedule to be evaluated. Update 1/14/08, JH	WI	7/31/07	02/29/2008

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<b>Mission Summary Map</b>	<b>G/Y/R</b>	<b>ISSUES / CONCERNS</b>	<b>WI/ERS/Risk/ Problem</b>	<b>Open Date</b>	<b>Due Date</b>
Engineering	G	MICD ICP approval for fairing door location change needed by Aug. 6, 2007. This is before MUPDR and MUCDR. Engineering decided not to approve the ICP at this time due to technical risk of proceeding with fairing manufacturing prior to completing ballast ring design. Risk sheet M0264 is in review. 8/29/07: MICD ICP#3 was signed by KSC for OCO on 8/14/07. MUPDR for Ballast Ring was successfully concluded 8/28/07. 9/17/07 JBM. MUCDR scheduled for 1/31/08. This item will remain open until risk	RISK M0264	8/13/07	01/31/2008
Engineering	G	Manufacturing process vulnerability in which Pacific Scientific detonators that have been reworked may have been inadvertently returned to production without the correct load of explosive material.  Risk accepted for AIM. OCO mission assessments of this Taurus vehicle risk item is ongoing. Update 11/9/07 JBM: Final resolution requires flight specific parts list.	RISK V0048	3/23/07	

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## OCO - Significant Events

### LAUNCH SERVICES PROGRAM

Accomplished	
PCLA	1/23/07
Bus CDR	02/15/2006-02/16/2006
MICD released	01/11/2007
Mission CDR	08/21/2006-08/24/2006
EICD released	01/23/2007
TFA	01/25/2007
Mission ICD released	04/12/2007
PMA	9/20/07
Softride Isolator CDR	12/11/2007
OCO PPF awarded	01/07/2008
ITA	8/9/07
Sep Analysis	8/7/07

Planned	
T8/T9 Ballast Ring MUCDR	1/31/08
GOWG at VAFB	02/05/2008
T8/T9 MUSAR	8/28/08
Softride Isolator CDR/ERB Reconvene	02/01/2008
CLA	9/3/08
FMA	9/3/08
RF Link Analysis	10/14/08
Flight Controls Analysis	10/14/08

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# OCO Mission Management

Dave Breedlove

## LAUNCH SERVICES PROGRAM

### Mission

### Launch Date

Orbit Requirement

### Launch Vehicle Class

### Launch Period Window

### PPF

Mass (kg)

PAD

OCO
2008/12/15
705 km / 98.2 deg incl
Taurus
TBD
ASO-VAFB
444 kg (TB)
567E

### Observatory Status

### Observatory Status

Schedule

Budget

Deliverables

Testing

ATLO

Instrument

Nov	Dec	Jan
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G
G	G	G

Mission Center:

Program:

PM

LVI

MM

IE

LSIM

PIM

MAM

MCE

MTE

JPL
ESSP
Tom Livermore
Mike Davis
Dave Breedlove
Jim Hoffman
Julie Schneringer
Ken Carr
Laura McDaniel
Ralph Mikulas
Nathan Wood



### Launch Vehicle Status

### Integrated Schedule

### CDRLs (S/C & LSC)

### Manifest/Range

Ground Stations

Deployables

P-3/OTTR

Nov	Dec	Jan
G	G	G
G	G	G
G	G	G
0	0	0
0	0	0
0	0	0

ICD

Nov	Dec	Jan
G	G	G

SIGNED SCNS:		SCNS IN REVIEW	
SCN #	DATE SIGNED	SCN #	DATE SIGNED
ICP-01, EICD	02/13/2007	ICP-06, Mission ICD	
ICP-02, EICD	02/13/2007	ICP-03, EICD	
ICP-003, MICD	08/14/2007	ICP-09, Mission ICD	
ICP-01, Mission ICD	12/17/07	ICP-10, Mission ICD	

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ICP-02, Mission ICD	9/10/07	ICP-4, MICD	
ICP-03, Mission ICD	8/28/07		
ICP-04, Mission ICD	12/17/07		
ICP-05, Mission ICD	9/10/07		
ICP-001, MICD	9/10/07		
ICP-002, MICD	8/28/07		
ICP-07, Mission ICD	12/18/07		
ICP-08, Mission ICD	12/18/07		
ICP-11, Mission ICD	01/07/2008		

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## OCO - Engineering

Jim Hoffman

### LAUNCH SERVICES PROGRAM

	Nov	Dec	Jan
<b>Launch Vehicle</b>	G	G	G
Payload Fairing	G	G	G
First Stage	G	G	G
Second Stage	G	G	G
Third Stage	G	G	G
Payload Attach Fitting	G	G	G
Other	G	G	G
<b>Mission Specific</b>	Y	Y	Y
<b>Certification</b>	Y	Y	Y
<b>Mission Analysis</b>	G	G	G
<b>ERS/ERB</b>	G	G	G
<b>Launch PAD/GSE</b>	G	G	G
<b>Mission Unique IV&amp;V</b>	N/A	N/A	N/A

REQUIREMENT VERIFICATION STATUS	
NUMBER OF REQUIREMENTS	177
VERIFIED TO DATE	0

LAUNCH PAD / GSE MODS (IF APPLICABLE)
Umbilical Harness Mod

MISSION UNIQUE STUDIES (IF APPLICABLE)
Ballast Ring Orbital Debris Survival

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## OCO - Mission ERB Status

Jim Hoffman

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	ERS-06-314	OCO ICD Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-06-328	OCO Umbilical Harness Modification	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	06-388	Taurus T8/T9 RCS Moment Arm Issue	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-188	Taurus T8/T9 MURR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-189	Taurus T8/T9 MUPDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-190	Taurus T8/T9 MUCDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-191	Taurus T8/T9 MUSAR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-07-27	S/C Shock test (Taurus missions)Using Flight PAF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	ERS-07-173	Taurus T8/T9 Softride Isolators CDR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## OCO - Vehicle ERB Status

Jim Hoffman

### LAUNCH SERVICES PROGRAM

R/Y/G	ERS #	TITLE	ERB Req?		Board Held?			Closure		
			Y	N	Y	N	N/A	AI	ENG.	OCE
G	04-460	TVC Lot 10 cap failure Power Board	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	05-52	SBS/OR Heritage Flight Computer Life Extension	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	06-140	Taurus XL Stage 1 Nozzle ECL and LEC material change from PAN to Rayon	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-69	S&A Failure to Rotate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-76	Orion Motor Case Resin Requalification	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-113	Safe & Arm (New Build) Process Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-114	Parker TVC H-Bridge Shoot-through during T4 testing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-138	Taurus Stage 1 TVA Kit Changes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-144	Orion Motor Nozzle Rayon Replacement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	07-169	Taurus - TDRSS Transmitter PDR (LCT2 Xmtr)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## OCO - Launch Site

Julie Schneringer

### LAUNCH SERVICES PROGRAM

#### LSSP

Nov Dec Jan

G	G	G
---	---	---

LSSP	Planned	Released
Preliminary	07/2007	08/27/2007
Baseline	02/2008	

#### CUSTOMER INPUTS

Nov Dec Jan

G	G	G
---	---	---

#### DELIVERABLES

Nov Dec Jan

Security and Badging	G	G	G
Training and Personnel Cert	G	G	G
Contingency Plans	G	G	G
Safety LSIM	G	G	G
Radiation Control	G	G	G
Operational Plans	G	G	G

#### UNIQUE REQUIREMENTS

##### LAUNCH SITE UNIQUE

Nov Dec Jan

G	G	G
G	G	G

##### PPF

Commercial PPF

G	G	G
G	G	G

##### Spacecraft OPS

Fueling

G	G	G
G	G	G

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# OCO Budget Breakdown

Ken Carr

## LAUNCH SERVICES PROGRAM

The launch service budget includes:

\* **Launch Services**

- Standard launch Vehicle Services provided by this contract. This line item is firm fixed price and has no flexibility.
- 
- 

\* **Mission Uniques**

- Requirements necessary to customize basic vehicle hardware to meet unique s/c driven requirements.
- Other services directly attributable to the mission.
- Contains some flexibility except when technical risk is affected. Spacecraft requirements are the cost driver.

\* **Integrated Services**

- LSP contractor support service (ELVIS, CAPPs, JBOSC, KICs, etc).
- USAF range costs attributable to the mission
- Limited flexibility

\* **Payload Processing Facility**

- Government facility: spacecraft customers are required to be processed in a government facility if the mission is planetary or has nuclear requirements
- Commercial facility: all other missions have been directed to process in a commercial facility;
- Contains some budget flexibility. Additional spacecraft cleanliness requirements or hazardous requirements may increase PPF costs.

\* **Telemetry**

- Assets required to meet minimum launch vehicle telemetry requirements.
- Includes fixed and deployable ground stations, instrumented aircraft, and ocean assets.
- Limited flexibility requirements are often set late in the integration cycle.

\* **Fly Out**

- Costs that each mission in the 19-Pack must incur.
- Long lead material procurement to mitigate risks due to gaps in production and supplier orders.
- Post-production support for labor skill retention, procure, manufacture, store and maintain under configuration control, mission critical spare parts.
- Pad Sustainability costs for SLC-2 and SLC-17.
- No flexibility-contract costs

\* **Nuclear**

- RTG/RHU processing
- RTG/RHU databooks and approval
- Limited flexibility

\* **Reimbursable**

- Reimbursable FC for transportation, labor, and CMO.

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<sup>a</sup> **Mission Flexibility**

- Portion of the mission budget available for funding additional task assignments, non-standard services or meeting unexpected requirements.



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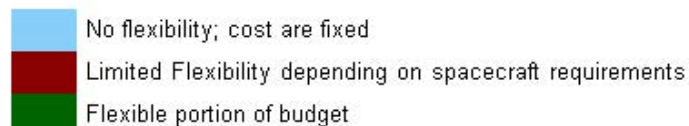
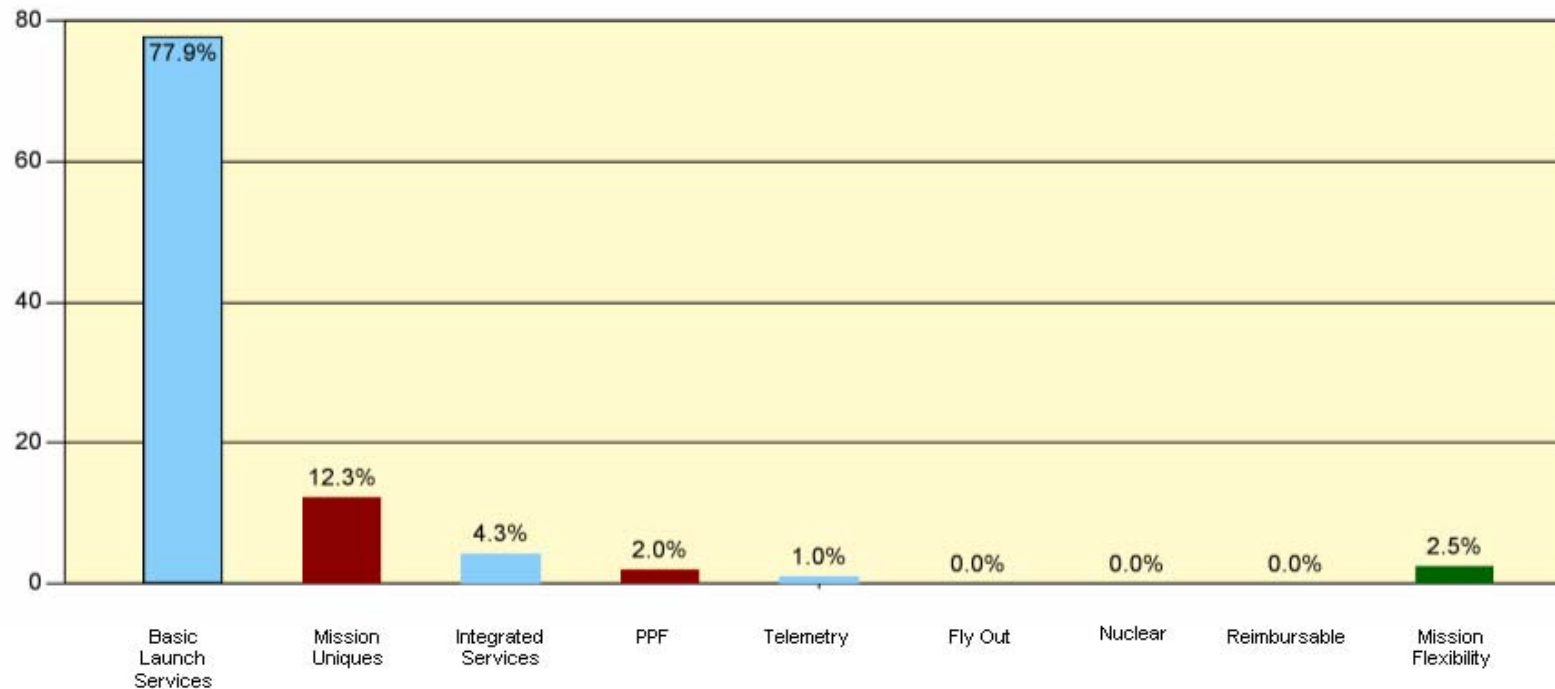
## Launch Services Budget Breakdown

### OCO Mission

Ken Carr

#### LAUNCH SERVICES PROGRAM

% of Total Launch Service Cost - 1 / 2008



#### Notes:

Variance: Reduced lien for PPF and added lien for test isolator caused slight increases in Mission Flexibility.

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## OCO - Business

Ken Carr

### LAUNCH SERVICES PROGRAM

**Budget**

**Contracts**

Nov	Dec	Jan
G	G	G
G	G	G

Milestone	Date
Milestone 1A	11/15/2003
Milestone 1B	11/15/2004
Milestone 1C	11/15/2004
Milestone 1D	8/1/2005
Milestone 2A	10/15/2005
Milestone 2B	11/15/2005
Milestone 2C	02/15/2006
Milestone 2D	02/15/2006
Milestone 2E	10/15/2006
Milestone 3A	11/15/2006
Milestone 3B	11/15/2006
Milestone 4	04/15/2007
Milestone 5	08/15/2007
Milestone 6	03/15/2008
Milestone 7	06/15/2008
Milestone 8	08/15/2008
Milestone 9	11/15/2008

<input type="checkbox"/>	Open Milestone Payment
<input type="checkbox"/>	Paid Milestone

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Contract Status				
Launch Services				
Contract Mod	Number	Description		
	Mod 10	Launch delay from 08/13/2007 - 09/15/2008 and Softride addition		
	Mod 17	Test Payload Adapter Fitting support		
	Mod 24	Addition of non-standard services: Umbilical harness,Test Isolators & Instrument Purge		
	Mod 31	Ballast Ring for launch vehicle		
There are no LD Contract Mods				
Task Assignments	Number	Description	Completion Date	Invoice Paid Date
	SP-24.001	Soft-Ride coupled loads analysis using XL environment		
	SP-24.002	Upper stage motor production hold (non-mission funds)		
	SP-24.003	RF/EMI compatibility study		
	SP-24.004	Payload CDR Support		
	SP-24.005	Umbilical connector test support		
	SP-24.006	Trajectory Feasibility Study		
There are no PPF Contract Mods				
There are no Other Contract Mods				
There are no Issues.				

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Center

# OCO - Safety and Mission Assurance

Laura McDaniel

## LAUNCH SERVICES PROGRAM

Assurance Verification Areas	Status		Evidence of Completion	Nov	Dec	Jan
	Complete	In Work				
<b>Quality</b>				Y	Y	Y
Software / Hardware Problems	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The Taurus vehicle is under certification efforts by LS SMA and NASA LSP. Due to outstanding Data Requests for Taurus vendors from previous site visits, all hardware and software fabrication operations are not fully certified.	Y	Y	Y
Alerts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	G
Audits/Inspections/Surveillances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues or concerns	G	G	G
Limited Life Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	G
<b>Reliability</b>				G	G	G
FMEA/Fishbones/Equivalent	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Failure analyses assessments have been initiated along with vehicle certification planning	G	G	G
Reliability Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Design Reliability Report (DRR) from Orbital was received 11/16/07. A TIM was held 12/14/07 to discuss the delivered DRR which resulted in Orbital revising the DRR based on TIM comments. The revised DRR is expected by mid February 08.	G	G	G
<b>Safety</b>				G	G	G
Requirements Definitions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EWR 127-1 Requirements Checklist - Completed. Out for Review.	G	G	G
Range Safety & Mission Flight Rules	<input type="checkbox"/>	<input checked="" type="checkbox"/>	In Work (Range Safety)	G	G	G
Licenses/Use Authorizations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	In work	G	G	G
Safety Documentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Comments submitted for preliminary MSPSP	G	G	G
Non-compliances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	S/C: Non-compliance to be written for spacecraft contingency offload	G	G	G
Contingency Planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues identified to date	G	G	G
<b>Mission Assurance</b>				G	G	G
Lessons Learned	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No previous NASA Taurus missions - Other KSC LLs will be reviews/addressed	G	G	G
First Flight/Mission Unique items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Certification Effort in work	G	G	G
Test/Qualification/Certification	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Certification Effort in work	G	G	G
Mission Assurance Assessments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No issues	G	G	G

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